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ELECTRICITY ON THE FARM *Magazine*

FEBRUARY, 1954

Pipeline Halves Milking Time
Big Job for Small Motor . . .
Electric Units More Efficient
How to Build a Hotbed . . .
Chopper Makes Better Bedding

27th Year

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A CASE-SHEPPERD-MANN PUBLICATION

Ask for G-E Motors and Control on all Electrified Farm Equipment you buy!

GENERAL ELECTRIC FarmNews

Ask for G-E Motors and Control on all Electrified Farm Equipment you buy!

MORE POWER TO THE AMERICAN FARMER through more electricity on the farm

STOCK WATERERS SAVE WORK FOR FARMER

FARM WIFE SOLVES GARBAGE DISPOSAL PROBLEM

Mrs. Spencer using her mulch-producing garbage disposal unit. Since there is no odor, it is located on back porch.

Mrs. C. B. Spencer, Route 1, Downingtown, Pa. has been using a garbage disposal unit which turns her kitchen garbage into a fluid mulch. Mrs. Spencer is well satisfied with her unit. She says, "I've used it every day for the last two years. It takes care of my garbage and makes it odorless and ready to use as a fertilizing mulch. I use the mulch in my garden, around strawberries, tomatoes, flowers, and shrubbery."

The disposal unit is powered with a dependable G-E motor. For more information check "Garbage Disposal" on the coupon to the right.

They work automatically, won't freeze in winter, help boost meat production by adequate watering

One of the electrically heated automatic stock waterers in use on Oryne Kersten's farm. It assures a plentiful water supply for his animals even in coldest Iowa weather.

"Thanks to my automatic stock waterers", says Mr. Oryne Kersten of Dysart, Iowa, "I can water 50 head of cattle and 100 head of hogs without lifting a finger. What's more, I don't have to chip ice in the winter." Mr. Kersten raises registered Hereford beef cattle and spotted Poland-China hogs.

COMPLETELY AUTOMATIC

Mr. Kersten saves time and labor by eliminating tedious watering chores. Dependable G-E CALROD* heating units keep troughs ice free even in coldest weather. Waterers are automatic and safe for animals. For more information please check "Stock Waterers" on coupon below.

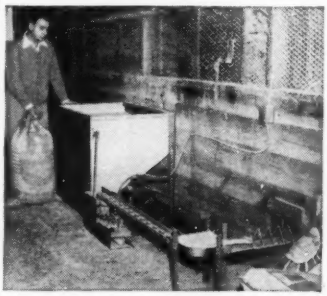
Registered Trademark of General Electric Co.

ONE MAN TAKES CARE OF 6000 BREEDER CHICKENS

"I've been using two automatic feeders for two years," says Mr. Gus Stern, owner-manager of Stern Bros. Hatchery, South Vineland, N. J. "One man now easily takes care of 6000 Leghorn breeders. He could take care of 12,000 if necessary. Using the old hand feed method, a man could take care of only 3000 birds and work harder doing it."

Feeders are completely automatic. Both feeders are located in one central room where feed is stored so handling is kept to a minimum.

These automatic poultry feeders are powered by G-E Gear Motors. For the complete story, check "Poultry Feeders" on coupon.



Mr. Stern and one of his automatic poultry feeders. Bin holds up to 700 pounds of mash. Agitator in bin keeps feed flowing. Notice wire guards on trough and guard on corner.

General Electric Company
Section 671-251, Schenectady 5, N. Y.

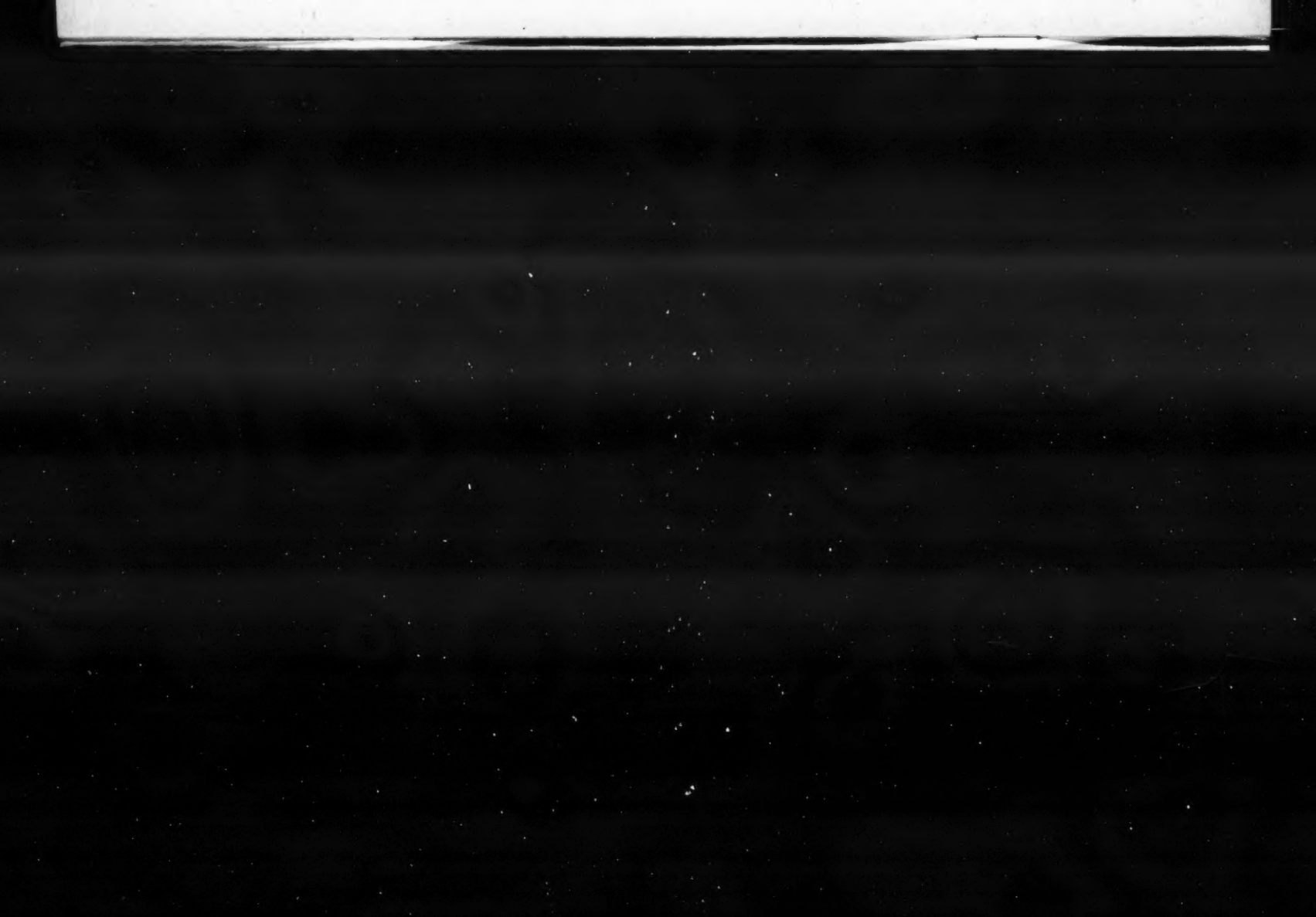
I would like additional information on the following equipment.

- ☐ Stock Waterers ☐ Poultry Feeder
- ☐ Garbage Disposal
- ☐ How to Choose Your Motor

NAME_____

ADDRESS_____

CITY_____ STATE_____



Editor's Chat

A WHALE OF A GOOD IDEA

"When you are down in the mouth think of Jonah, he came out all right."

February and March are usually pretty dismal months over a large part of these United States. Rain, sleet, snow, mud and wind outdoors and a lot of repairing still to do indoors make life look dark and sour.

If your shop is cold and uncomfortable or the lighting poor where you have to work, it doesn't help the situation one bit. Put electricity to work to make it brighter and more comfortable for you. Look through your files of *Electricity on the Farm Magazine,* which you should keep handy, and you will find many good examples of "how to do it." This goes for a host of "inside jobs" that can be highly profitable. And the time will seem all too short till you have to start work out of doors again.

Maybe you should cut out that first line about Jonah and pin it up over your desk or the kitchen sink. It isn't always the job at hand that's discouraging, it's how well we are equipped to tackle it.

WHAT NEXT

There is nothing so certain as change. The farmer has had to change and readjust from the horse and buggy days to the era of the tractor, truck and electric power. Now he faces a new era, that of chemistry. The relatively simple chemistry of fertilizers was only an initiation for the more complicated formulas of sprays and now of herbicides and biological products. One needs a college education in chemistry just to be able to read about these new developments with some degree of understanding.

This new science of making things synthetically that Nature failed to provide opens new horizons that tax the imagination, and our research men have plenty of imagination. The woolly sheep and fluffy cotton are challenged by a host of fibers made from glass, tar and forest trees. The faithful cow is threatened by so many kinds of vegetable fats from so many parts of the world that her musical Moo may become as rare as the clump of horses' feet on Broadway.

What does this mean for you and me and for our children? It means we must keep up our own education by reading and study in an effort to keep abreast of our times. More especially, it means we must give our children the best education we can to fit them for the bright and bustling future they are to enjoy. They need all the inspiration, encouragement and guidance we can supply.

It is just as important, just as much a part of our job and our duty to supply this as it is to provide three good meals a day, some cookies in the cookie jar, and a snack in the refrigerator.

COUNT YOUR COSTS

Some figures recently published show that the relative importance of farm costs has changed a lot in the past few years. Whereas the old order was about like this: hired labor, depreciation, equipment, taxes and interest. It has changed to this order for most farms: feed, seed & fertilizer, equipment, depreciation and hired labor near the bottom of the list.

Whether this decline in the relative labor cost is due to the fact that you can't get labor or can't afford it, or to using more mechanical energy because it can furnish power cheaper than feeding ham and eggs to a hired man may be open to debate. It is a fact that hired labor cost is declining in importance. And good farm management must continually focus its attention on all facets of cost.

The modern farmer to be successful must be as good a factory manager and businessman as the men operating big industry. Sometimes we think he has to be even better, don't you?

Jim Ridout

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AUTOMATIC DEFROSTING AT NO EXTRA COST IN EVERY MODEL!

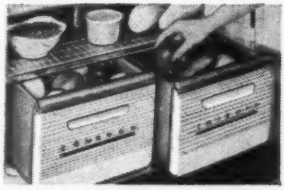
All have full-width freezers, new deeper door shelves, cold-clear-to-the-floor, new "Sea Tone" styling

Why put up with messy hand defrosting? There's a better way—new "Magic Cycle"* Automatic Defrosting Kelvinator. And you don't have to choose a size that doesn't fit your farm home needs or pay a price penalty. Automatic defrosting is yours at no extra cost.

You'll never defrost again! This 11 cu. ft. beauty is one of 5 Anniversary Models from the oldest maker of electric home refrigerators. New production techniques . . . fewer models let Kelvinator bring you quality features plus automatic defrosting at no extra cost.

New magic kind of defrosting. Even ice cream forms stay solid, never "defreeze" during "Magic Cycle" defrosting. *No electric heaters*—It's safer! Surer!

New shelf convenience. Load heavy bottles on Kelvinator's Dairy Shelf. It rolls out! Slide-out shelf, removable half shelf too, of sturdy rustproof aluminum.



New crispness for salads. Deep "Moisture Seal" Crispers keep salad makings garden-fresh. "Cold Mist" keeps nearly a bushel of produce at peak flavor for weeks.

*Patent applied for.

Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Mich.

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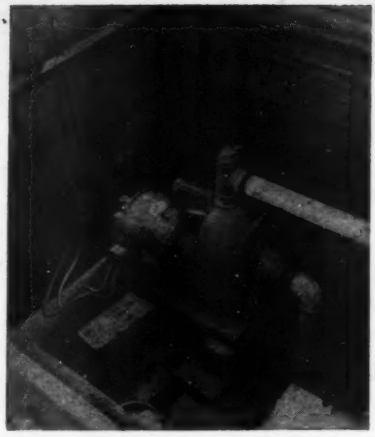
Big Job – Small Motor

¾ HP Pump Reclaims $3000 Worth of Rich Farm Land

By WILLIAM T. HUFFERD



Here's the pumping unit that does the job. It sits right inside the cypress-lined sump. Rod, at left, is from float and turns motor on and off as water level varies.

A couple of years ago, Mr. Henry Benak of Winfall, Indiana, decided to do something about eight acres of his good Tipton County farm which was almost continuously under water. He first decided to drain it, through tile, into a county ditch some 2,000 feet from the pond. But this would have involved the hiring of a ditching machine and the bulldozing of some high ground to get the ditch deep enough. Benak was of the opinion that there was a cheaper way of doing the job.

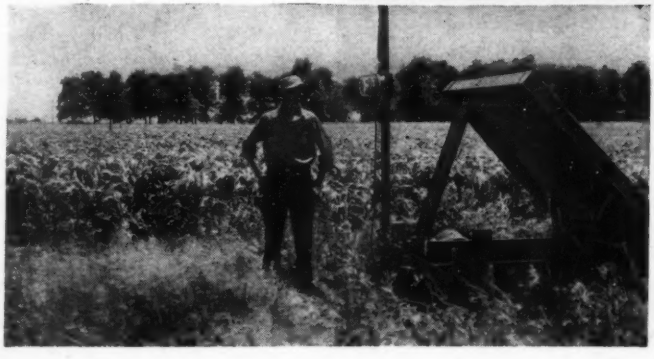
About that time he received his February 1951 copy of ELECTRICITY ON THE FARM Magazine. An article therein was entitled "When Tile Is Not Enough—Use a Pump." This, he decided, was the economical way to drain his pond.

There was an existing 10" tile ditch located near the pond, but it was too high to provide drainage. Benak dug a 5'x5'x10' sump near the end of the 10" tile ditch and lined it with cypress lumber. Then he obtained a high capacity, low-head pump powered by a ¾ hp electric motor which he installed in the sump and controlled with an automatic float control. He ran two short spurs of 6" tile from the sump into the heart of the pond. As these drain water into the sump, the pump lifts it about four feet into the 10" ditch and it then drains away.

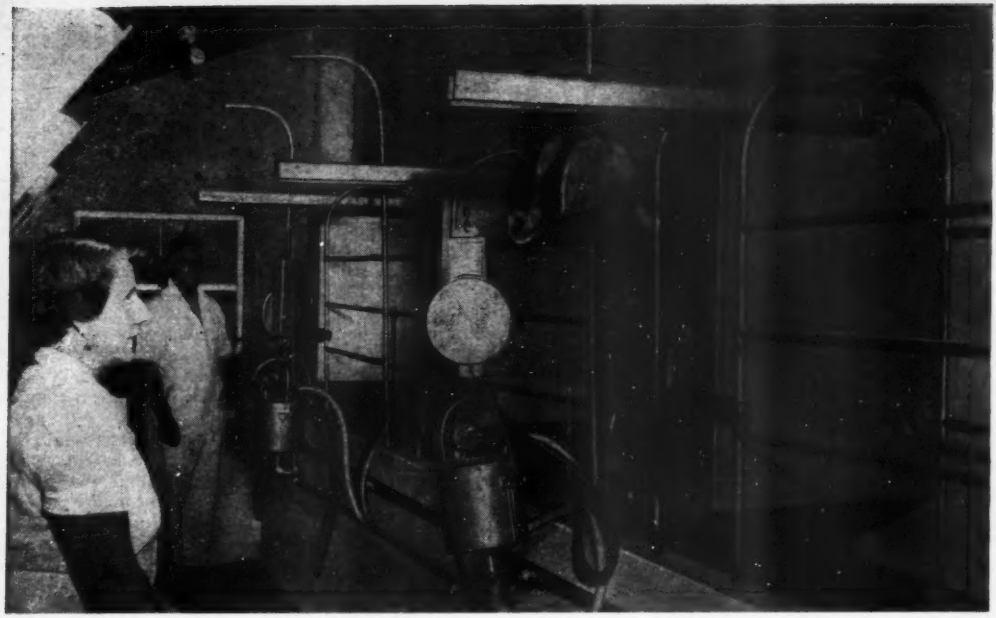
Mr. Benak discovered in the Spring of 1952 that his drainage system would do the job despite the fact that he had six inches of rainfall in the month of May. He did not have time to clear the willows for a crop that year, but has the job done now. His total investment was about $400 for pump, sump, and tile. The pump will deliver about 5,400 gal. of water per hour at four feet head, and pumped more than 3,000,000 gallons of water in the first seven months of '53.

All of this project's work was done by Mr. Benak. He put in the sump, installed the pump, rigged up the automatic control, and grubbed the willows from the pond. In 1953 he had about five acres of the former pond in corn.

This particular area contains some of the richest corn land in Indiana and is fully capable of producing 90 to 100 bushels of corn per acre. Therefore, there wasn't much gamble involved in the project, as some simple arithmetic will show. The electrical power consumption for the first seven months of '53 was only 524 kwhr, a very small amount for the operation of the pump which has reclaimed $3,000 worth of Tipton County, Indiana, farm land.



Quite a contrast! The overgrown, useless land, above, is the same as that shown at left. The difference was made possible by Mr. Benak's use of a small drainage pump.



Mr. and Mrs. Bonner in their pipeline goat-milking parlor. Milk is weighed in one gallon containers after each goat is milked. It is then drawn through sanitary pipeline directly into the cooler.

Pipeline Halves Milking Time

In This Tailor-Made Parlor for Goats

By PAUL R. ANDERSON

For twenty years the Albert Bommers have bred and raised purebred Anglo-Nubian goats on their farm in Valley Park Hills near Valley Park, Missouri. And to crown their success in the dairy goat business, they have recently installed what may be the first pipeline milking system for goats in the Country.

The system is patterned after the regular pipeline milking system for cows but, being designed for milk goats, it has been scaled down accordingly.

The milking parlor has four, narrow, elevated walk-through stalls, and an operator's aisle 6′ wide and 28′ long. The loafing shed, adjacent, measures about 20′ x 40′, which does not include a 3′ x 5′ feed room.

The milking system, which was designed by George I. Hauk of St. Louis, Missouri, is powered by a ¾ hp motor. The milk flows directly from the goat's udder through a clear plastic hose into the one gallon container attached to each of the two milkers. Here it is weighed, then drawn into a one inch stainless steel pipeline which empties into the specially designed 55 gallon milk cooler.

An entire set up such as the Bommer's would cost somewhere around $5,000. This would include the four stanchions, the two milkers, the cooler, the

Goats are naturally curious. Whether or not she can read the scale, nanny wants to see what's going on. Note that the goat milker only has two teat cups. Work cut in half, too!

pipeline, and the pit milking parlor. However, the installation of such a system can cut working time in half.

Production in the Bommer Herd runs between 2½ and 3 quarts per day per head. A production record established by one of their best producers a short time ago was 3,000 pounds of milk and 151 pounds of fat.

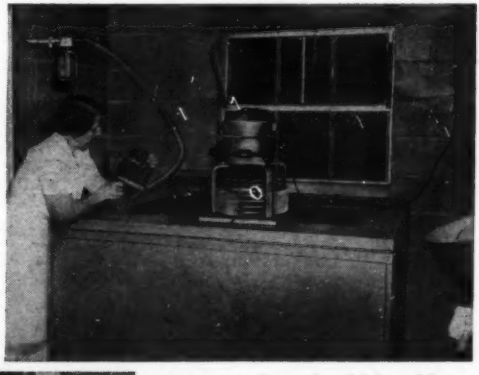
"Our production may increase somewhat with the new system," says Mr. Bommer, "and we know that our milking and cleaning time has been cut almost exactly in half. It now takes only about an hour to milk all twenty head. This includes all feeding, cleaning and bottling time. It formerly took us about four hours a day to milk. Now it takes only two. It's a startling thing when you think about it, but this amounts to a saving in time of 91 eight-hour days a year—three full months!"

Cleanup is simplified by an ample supply of hot water. The automatic electric water heater provides all that's needed for little more than $3 per month. Note the 1500 watt thermostatically controlled space heater. There is a second one which provides warmth in the milking parlor.

The cost of electricity for doing this job doesn't go over ten dollars per month, a third of which is used for water heating.

"With this system," says Mrs. Bommer, "we should be able to reduce our bacteria count to nil, since the milk is neither handled nor exposed to the air. And, of course, the immediate cooling improves the quality of the milk."

Right: Milk flows directly from the milking parlor into this specially designed cooler.



Below: Extra heat for the kids is provided by — you guessed it—infrared lamps.

The State University, which for years has tested the Bommer Herd for production, as well as for T.B. and Bangs Disease, has twice granted them awards for the production of superior quality milk—once ranking the herd first in the State and second in the United States. The bacteria count at this testing was only 100 per CC. This bacteria count may be contrasted with the ruling of the U.S. Public Health Service which permits up to 50,000 per CC for Grade A milk.

Goat's milk, which sells for about 50¢ per quart in the St. Louis area, is widely recommended by the medical profession for use by persons afflicted with stomach troubles, since it is extremely easy to digest. Goats' milk has natural soft-curd characteristics.

In commenting upon the feeding and housing of goats, Mr. Bommer had this to say. "Goats are hardy foragers and actually prefer brush and briers to most pasture grasses. However, roughage is essential and the mature goat must have at least three or four pounds of hay a day or its equivalent in grazing. They prefer leafy legumes to grass hay. A mature milk goat needs about 1½ pounds of grain daily for body maintenance and enough above this amount to satisfy her appetite and insure good production. Salt should always be available along with plenty of water."

"The automatic watering equipment is a very important part of our new system," says Bommer. "Clean water is an essential part of the ration."

According to the Bommers, goats must have dry, well ventilated shelter. "They hate drafts and hate getting wet worse than anything. But even these disagreeable conditions would not make the goats nearly as unhappy as going back to hand milking would make me," says Mrs. Bommer.

From Bin to Bunk

Power Feeding is Quick, Simple, Accurate

By **MAX SAUDER** and **O. J. TRENARY**

The scale operator sets the weights, then pushes proper button to load either hay or silage.

Everette Marshall, former Worlds Heavyweight Wrestling Champion, has a farm located west of La Junta, Colorado, and believes in using electricity rather than muscles in his feeding operations.

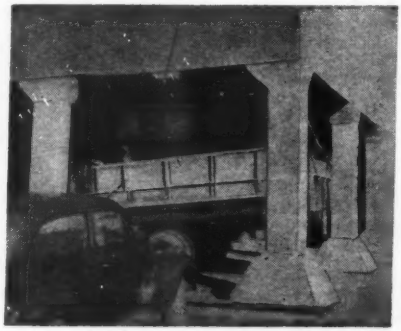
Everette feeds approximately 20,000 head of cattle per year. The feed lots on his 1,600 acre farm have a capacity of 10,000 head at a time. In addition to the feed raised on his farm, a great deal more must be purchased. During 1952 over $1,600,000 worth of feed and labor was paid for through his office. For such a large feeding operation efficient arrangement and use of equipment is imperative. Let's see how he does it! We'll follow the course of the feed from its arrival until it is mixed and deposited in the feed bunks.

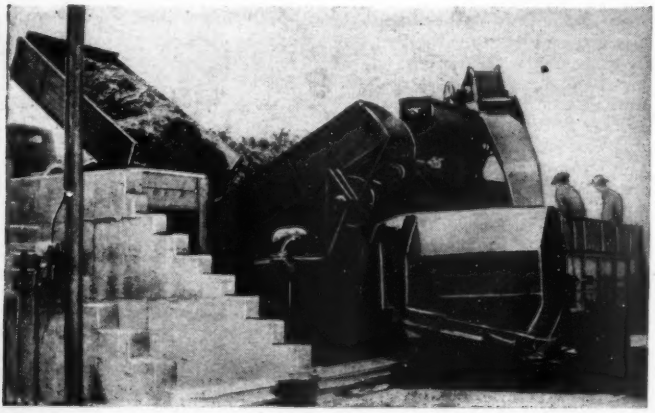
Fresh silage and chopped hay are dumped into two storage bins. The trucks, delivering the forage, back into position, the bodies are raised hydraulically, and the feed drops into its proper bin. The bins are kept full enough so that the unloading conveyors, located on the opposite side, are self-loading.

A very wide unloading conveyor is used in the silage bin to speed the handling. It distributes the ensilage evenly over the length of the trucks which service the feed bunks. The conveyor is built from a truck bed, with a built in conveyor apron, and will deliver one ton of silage per minute. It is driven by a 5 hp motor. The ratio of the speed between the motor and the conveyor drive is about 80 to 1.

A smaller conveyor is used to convey the chopped hay from the bin into the waiting trucks. This elevator delivers 600 lbs of chopped hay every 1½ minutes and is powered by a 3 hp motor. A 60 to 1 reduction is used between the motor and the conveyor drive to get desired speed.

Start and stop buttons, controlling the motors on the two unloading conveyors in the bins, are in a scale house nearby. As soon as one of the trucks which service the feed bunks drives upon the scales, it is weighed. The weight for the truck and chopped hay is determined and the scale weights adjusted to give the amount of hay desired for the proper feed mixture. The motor switch button is pressed to start the conveyor in the chopped hay bin. As soon as the weight set on the scales is obtained, the opposite switch is pressed to stop the conveyor motor. The chopped hay is distributed evenly over the truck bed. The same operation is now repeated to load the desired amount of silage on top of the chopped hay.





Above: Proper amount of grain for weight of roughage is spread evenly over load.
Left: Nearest elevator handles silage, one at right is for hay. The men spread the hay evenly over the truck bed. Truck at left is filling storage bin.

Next, the truck loaded with forage is driven to the grain elevator, which holds 22 carloads of grain. The grain passes through a roller mill, is raised to the top of the elevator by a 7½ hp motor, and falls into a trolley type of hopper with a built-in scale. As soon as the truck drives under the hopper, the proper weight of grain is distributed over the top of the silage and

chopped hay. The load of chopped hay, silage and grain is then driven to the corrals. As the truck drives down the passageway between the corrals, the feed is mixed and unloaded into the feed bunks.

The trucks carrying the feed have a built-in conveyor that is driven by a power take-off. At the rear of the truck are two beaters. As the feed moves to the rear, it is mixed by the beaters. It passes through the beaters and drops into an auger, below them, which delivers it to the side of the truck. There it drops into the feed bunks as the truck moves along.

The feeding unit on the Everette Marshall farm is operated 8 to 10 hours per day the year around. Mr. Marshall figures the arrangement takes the place of 6 to 8 men, and enables him to get along with one-half the number of trucks that would otherwise be required. It also gives him an accurate control of the feed mix. Everette further states that in three years it has paid for itself and saved 12 to 14 thousand dollars. When you're operating 42 feeding corrals, there's just as good a chance for saving as there is for waste.

Trough Cleaning Vac

The Cover Story

Every day, a remodeled vacuum cleaner saves Harry Lechner a lot of time in his poultry plant at Kirkwood, Washington. It cleans the water out of the small "V" shaped water troughs that are fastened along the sides of the layer's cages. In lifting the water it also removes the dirt, doing a thorough cleaning job.

The arrangement, as designed by Mr. Lechner, is simple and the cost was low. He used material that was available around his ranch, or that was found at little cost.

For $1 he bought an old basket cart that had been used by customers in a grocery store. The basket was removed and a 10 gallon milk can was mounted in its place. Next he cut the metal bottom out of the can's lid and mounted a board, that would close the opening, across its top. An old discarded vacuum cleaner, with bag and nozzle removed, was then mounted on the board with its fan setting tightly over a hole. This left the collar, where the bag had been attached, open so that the cleaner could suck the air out of the can.

Mr. Lechner then cut a second hole in the board just large enough to take one end of the vacuum cleaner's attachment hose. This was fastened securely in place so that no air could leak by it. To the other end he fastened a narrowed tube designed to fit into the water troughs.

The cleaner was then ready for action. The electric motor of the cleaner was turned on. The fan sucked the air out of the can, then out of the hose, and set up a suction at the end of the hose in the water trough. The water and dirt were sucked in through the hose and dropped into the can.

The troughs can now be cleaned just as fast as Mr. Lechner can conveniently move along. Eight minutes are all that are required to clean seven 40 foot troughs.

WIRED WONDERLAND
INTERESTING FACTS ABOUT THE INDUSTRY THAT SERVES YOU.
Strictly for the Birds!
IN SOME COASTAL AREAS, BIRDS, AS WELL AS PEOPLE, ARE SERVED BY ELECTRIC UTILITIES..... THEY ARE PROVIDED WITH THEIR OWN PRIVATE WIRELESS POLES!
WHEN POWERLINES WERE FIRST STRUNG, THE OSPREYS, OR FISH HAWKS, STARTED BUILDING THEIR HUGE NESTS ATOP THE POLES. THIS GROUNDED THE WIRES AND CREATED A SERIOUS OPERATING HAZARD. AFTER REPEATED ATTEMPTS TO DRIVE THE BIRDS AWAY, IT WAS DECIDED TO SERVE THEM INSTEAD.
SEPARATE POLE LINES WERE SET TO PARALLEL THE AFFLICTED POWER LINES. CROSS ARMS WERE ATTACHED TO THE POLE TOPS AND BOARDS WERE ADDED TO PROVIDE A PLATFORM.
THIS OFFERED A MORE DESIRABLE NEST SITE AND THE BIRDS WERE QUICK TO SEE IT..... THEY NOW COOPERATE BY BUILDING NESTS ON THEIR OWN POLES, LEAVING THE POWER LINES CLEAR.

This storage bin holds 15 tons of feed and is serviced by a bulk delivery truck. The sloping bottom makes the mash flow into the auger, housing for which can be seen at bottom right. The auger transfers the mash to the automatic feeders.

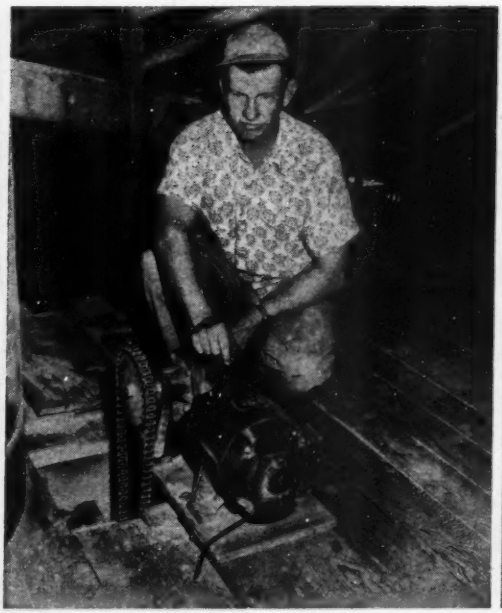
Fitting Fryers

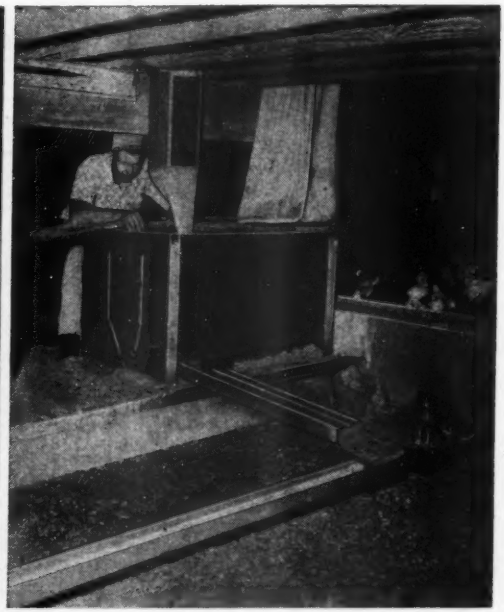
Pushbutton Controlled, Motorized Equipment Handles the Mash

Bulk delivery of grain to farm storage bins often leads to increased mechanization of feed handling. Fritz Holsclaw of Loomis, California, has devised an extremely efficient and quick method of filling automatic feeders on his poultry farm.

Holsclaw's poultry house is one which holds 15,000 fryers. It is divided at the center into two sections. This provides an alley in which three automatic feeders are located. Each one is powered by a ½ hp motor and provides a constant flow of feed into chains and troughs coursing through both sections of the house.

To keep them supplied with mash, a 4" auger, 42 feet long, is used. It runs from a 15 ton steel storage bin located outside the house. A 1½ hp gear-motor drives it at 96 rpm. Above each feeder a gate and chute were arranged in the auger trough. This makes it possible to fill each machine separately. Each unit holds a half-day's feed supply. Filling takes place morning, noon and night, and requires just the flip of a switch and opening of the gate at each feeder.





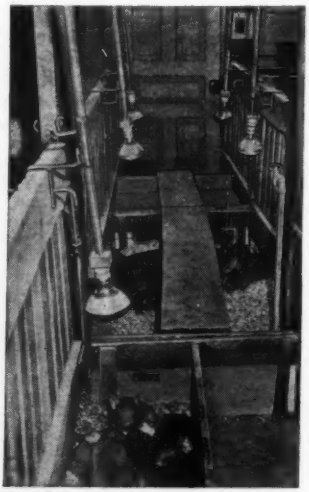
Left: The gear motor drive for the auger is located on a storage platform over the automatic feeders. **Right:** Mr. Holsclaw checks the level of mash in one of the feeder hoppers. Three of these units take care of 15,000 fryers.

Novel Brooder for Pigs

The desire for safety, convenience and compactness in a pig brooder led to the development of a special infrared heat lamp support on the Clark Smith Farm, R#1, Vicksburg, Michigan.

A remodeled horse stable 20′ x 26′ gave Mr. Smith enough room for 8 small farrowing pens with a center aisle. A conventional brooder in the corner of each pen would have been too crowded, so it was decided to have the aisle serve as the brooding area. The partitions of all the pens were mounted by means of iron bars and pieces of strap iron. This permits them to be removed, for storage, or to be raised to allow the small pigs to enter and leave the brooding area at any time.

A means of supporting the heat lamp was desired, which would give the operator easy acces to the pens without danger



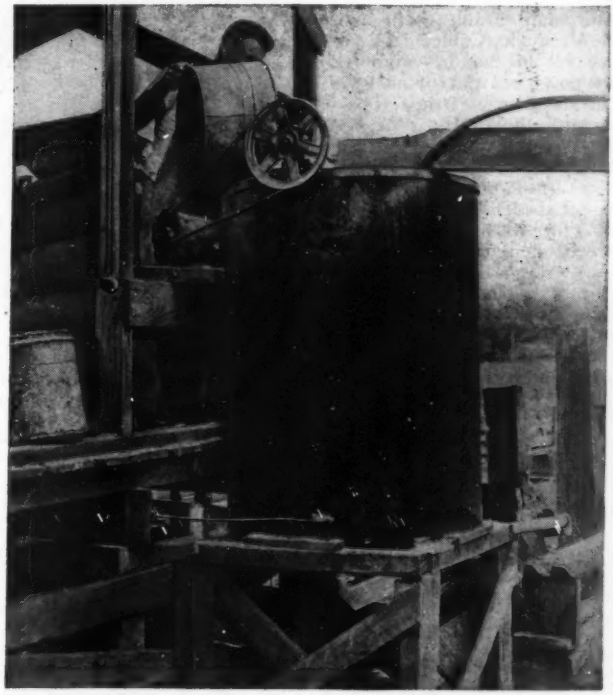
There are two clamps per unit. One holds the rod and the other clamps to the partition.

to the heating units. Mr. Smith's son, Ed, was given this problem and he came up with an idea which would combine the desired features. The accompanying picture shows how the brooder unit was made.

The longer piece of pipe slides up or down in the shorter section and can be secured at the height desired by means of a set screw. The length of electric cord, which feeds from an overhead source, is long enough so that the unit can be placed at any location on the partition. The excess cord is secured to the ceiling by using a piece of rubber tube which holds it out of the way. Mr. Smith supplied the materials and had the welding done at a total cost of less than $2.00 per unit without lamp.

It is advisable to use the hard glass type of heat lamp for such an installation as this.

H. H. MARSHALL.



Rapid Gains for Hogs

Ivan Brundage, a swine raiser near Woodburn, Oregon, follows a feeding plan which calls for full utilization of irrigated pasture with a supplement of grain morning and night.

Each morning his hogs receive three-quarters of a pound, apiece, of wet feed—a grain mash mixed with whey. They are then turned onto the pasture for the day. At night they are given a second helping of three-quarters of a pound of wet feed. Brundage holds down the amount of grain fed to make sure the hogs will eat the ladino clover. He finds that they like it, thrive on it, and grow fat. He feeds the grain in wet form to make sure that each hog gets a proper share of it, and to eliminate waste which occurs when dry grain is fed.

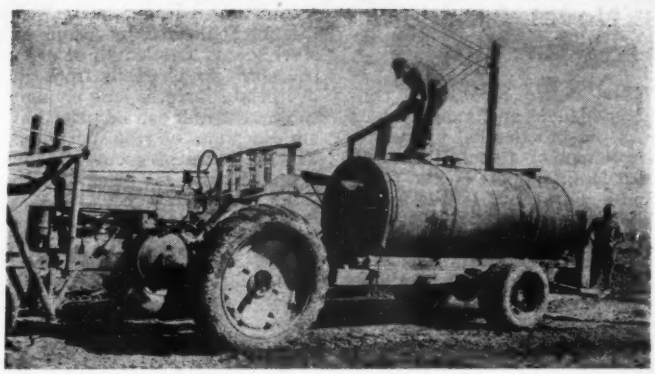
The grain mash and whey are mixed in a 210 gallon tank. An 18″ mixing blade, 1¼″ wide, is mounted on a shaft that extends down into the tank from the top. It is turned by a ¾ hp motor mounted alongside the tank. A Vee belt drive is used to transmit the power.

This method of feeding makes it possible for Brundage to get 100 pounds of pork for each 200 pounds of grain. His record books show a cost of only $7.50 to produce each 100 pounds of pork, as compared with $15.00 per hundred for growers not using a similar method.

Liquid Manure Handling

Provides Year-Round Distribution

By F. Leland Elam



The tank method of distribution is preferred. However, when fields are soft, pipe is swung to connect with permanent line (in background) which delivers liquid to underground irrigation piping system.

Dairyman Frank Steiner of Vacaville, California, saves every bit of manure from his dairy cows and puts it back, in liquid form, on his irrigated pastures and alfalfa. His system is classed as outstanding by farm authorities.

The arrangement of the manure pit is such that Mr. Steiner is able to flush the milking barn, the feeding barn, and the corrals into it. Furthermore, he can distribute this liquid fertilizer to his pastures at all seasons of the year.

The 10′ deep storage pit, capable of holding 20,000 gallons, measures 12′ x 24′ and is located at the lowest point in the corral. It is completely covered to keep the cows away from it. Drainage to the pit is via open concrete drain, set at the ground surface, which carries the manure along as it is washed from the milking barn and holding corral. The floor of the feed barn and the corral around the barn is concreted with slope to the pit so that the wash flows directly into the pit.

A 2½ hp electric manure pump is used to raise the liquid fertilizer from the pit to two different means of distribution. During late spring, summer, and fall months, the liquid is pumped into a 1000 gallon tank trailer which is pulled behind a tractor. This tank has spreaders and valves at the rear for distributing the liquid as it is pulled along. It is hauled to the fields and the contents spread according to needs during the dry weather.

During the winter months, when the fields are too wet to drive on, a different system is used. The long pipe, used to fill the trailer tank, is swung around and hooked up to a permanent piping system that extends from the pit to the irrigation system, fifty feet distant. Thus the liquid fertilizer can be pumped onto the fields during a season when it would be impossible to spread it in the usual manner.

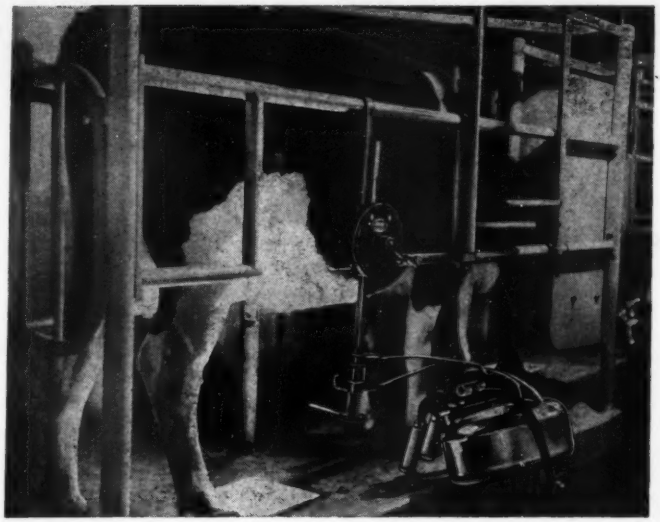
Although this last may appear simpler, Steiner much prefers distribution by the tank trailer. It gives him a chance to make distribution heavier at the point where it is needed most. He also much prefers the use of the liquid over dry manure because he can keep fertilization going all year. The liquid gives a much more even distribution than would the dry manure.

VERSATILE POWER

Richard Smolek, of North Judson, Indiana, cleans 500 bushels of buckwheat with his ¼ HP cleaner located right on top of the wagon. Many times it is more convenient to do a job that requires electricity away from a regular outlet. That's why heavy duty extension cords are so handy. With such a cord as this on a reel Richard takes his power to the work rather than taking the work to the power.

In regard to the buckwheat, it was grown on land that was too wet in the spring for planting regular crops. The pancake grain brought in good income after all the dirt, chaff, and other inert stuff had been blown out. From the mill the cleaned material falls into a wagon at the right side of the load.

George R. Harrison



The plate is located so as to throw the light up on the cow's udder. In this installation, the plate is five feet back from the feed bin.

Better View of the Working Area

Imbedded Unit Throws New Light on Bossy's Udder

The degree of cleanliness varies in most cases with the amount of dirt we can see. Light, and plenty of it, at the right

A 75 watt reflector floodlamp, in a porcelain socket, is installed in opening under glass floor plate. It is accessible from operator's aisle.

place enables us to do a better cleaning job, and also to do any job at hand, quicker. This is equally true for milking, whether in a milking parlor or in a conventional type barn.

Here is a Michigan installation in a milking parlor that provides plenty of light at the place it is really needed—on the udder. This is a three stall installation where each is equipped with a recessed floor lighting fixture. The fixture itself is comparatively simple. It consists of a 12" square of plate glass, 1" thick, set in the floor, with a flood lamp below it. Its installation must be planned before the concrete floor is actually poured.

As for its location, it depends on the type of cow. In any case, it should be located so the light source is directly beneath the udder. These particular lights are located five feet back from the feed bin and one foot from the aisle side of the stall.

The space allowed for the bulb is about ten inches square and about ten inches deep. It should be of sufficient size to allow space for a junction box, a porcelain socket, and a 75 watt reflector floodlamp. The lights are controlled from a wall switch. Access to the fixture, for service and cleaning, is provided by an opening from the alley.

Here you can see the glass plate in platform, the hole for the light socket, and the conduit for the wires.

Useful Farm Tool

A ¾ HP electric motor powers this farm built buffing and grinding machine built at the Homer Sanborn ranch at Meridian, California. The steel floor plate of the unit sits on three casters to allow for moving about. A metal and screen cage, over the motor and flexible shaft gear box, protects these units. The pipe with extending horizontal fingers at the top gives a place for resting the flexible shaft and tool—buffer or grinder—when not in use. Built of discarded materials, the entire unit, excluding the flexible shaft and buffer and grinder units, cost less than $5 to build.

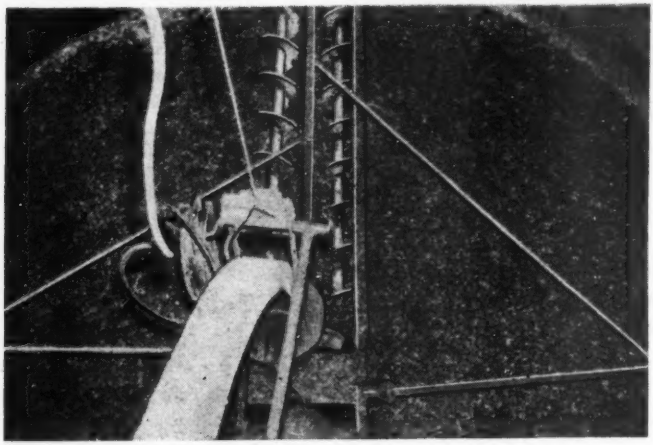
A Silo Unloader—Or Else

I'd Give Up Silage Rather Than Go Back to Pitching by Hand

By I. R. FISHER

I've only had my silo unloader for two months, but it's certainly the last piece of equipment I'd part with now," relates Walter Petersen.

Mr. Petersen and his son Jimmy have been feeding 25 head of dairy cattle and young stock on their farm near Britt, Iowa,



Two counter-rotating augers are supported on the main boom that sweeps around the silo. They loosen and feed the silage into the impeller which tosses it out and down the chute. The augers remove from one to two inches of silage per rotation of the boom.

and are both very enthusiastic about their new silo unloader.

Jimmy explained it this way, "I never realized that feeding silage could be so simple. All I have to do now is throw the switch and down comes the silage—even faster than I can carry it away. In fact, I don't ever turn the unloader on until I'm ready to feed and in 10 minutes time, the entire job of feeding is over."

"One thing I've thought for a long time, and I'm sure of it now," the elder Petersen was quick to add, "of all the jobs on the farm that ought to be done mechanically, there's none that should rate any higher than throwing down silage. A man is just asking for trouble to climb up through a cold ice covered silo chute twice a day, work up a good sweat throwing down silage, and then have to go back out into the cold again with damp clothing on."

Mr. Petersen's observation is very pertinent. In fact, the job of climbing up and down the silo alone is a tremendous, and often hazardous, task in itself. Although that silo may be only 48 feet high, a winter's feeding of silage means climbing practically 4 miles over an awkward and cold, ice covered ladder to do the job. If the silo is higher than this, or if it has no chute, as is often the case, then this job is even more treacherous.

One of the most severe jobs the silo unloader has to do is that of removing frozen silage. On this point, Petersen was very emphatic. "We've had several days of subzero weather this winter and I see absolutely no reason for concern over frozen silage with our unloader. Frozen silage used to be a real problem, not only to break loose in the silo, but also to get it broken up so the cows could eat it. The unloader does both jobs and does them even better than I ever did it by hand. The frozen silage is so well broken up, and mixed so thoroughly with the rest of the silage, that it is practically impossible to find any when feeding."

The Petersen silo unloader is very simple in operation. Three steel legs, formed in the shape of a tripod, sit on top of the silo to support the unloader. These three legs, which fit very nicely inside the roof, are tied together at the bottom by a steel cable to eliminate side pressure on the silo. A pair or augers, turning in opposite directions, gather the silage up and carry it into the impeller which in turn throws it out the door and into the silo chute. The augers also revolve around the silo, removing approximately 1 to 2 inches of silage at a time. The entire unit is supported by an adjustable cable which controls the rate at which the unloader is fed downward into the silage. In the event the unloader is working in grass silage, (Petersen's installation was corn silage) triangular knife points are added to the leading auger to break the tougher grass silage loose. Frozen silage is broken loose

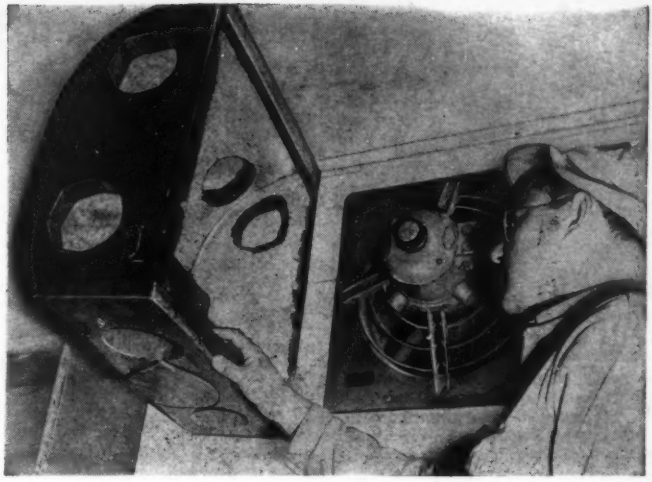
Mr. Petersen thinks a man is just asking for trouble by climbing up and down a silo every day. This 48' silo on the Petersen farm could be a convincing factor.

along the silo wall by means of a 6 pointed heavy cast iron wheel which actually chips its way through frozen silage.

The results the Petersen's new silo unloader has given have certainly removed any skepticism they had about the merits of this kind of equipment. "I'd give up my whole silage program", states Mr. Petersen, "rather than go back to throwing down silage by hand."

"It's amazing" states Mr. Petersen, "the kind of results you get with new equipment some times. Last winter, when we were throwing down silage by hand, both Jimmy and his older brother were at home to help with the chores. They're both real good boys but when it came time to feed silage, we used to have some real arguments on our hands as to who was going to climb up into the silo to throw down silage."

"That's not the best part of it, though" Jimmy added. "Since we've cut chore time in half with the silo unloader, I've been able to sleep that extra half hour I've always wished I could do."



Ventilator Muffler

Dairyman Merritt Hewitt, Jr., North Bennington, Vt., wondered if the noise of his cow-barn ventilator was disturbing to the herd at milking time. At any rate, he wanted to be able to hear the radio's farm programs while he was doing chores. So he installed this home-made muffler. It is shown here swung open. The muffler is built of plywood lined with Celotex, with holes cut out for fan's air. It cuts noise in half.

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Worry-Free Stock Waterer

With electric stock waterers coming rapidly into use, the experience of a Kansas Farmer may be of interest to other stock raisers. L. M. Hitch of Burrton, Kansas installed an automatic, electrically heated stock waterer on October 23, 1952 in his feed lot where he had 10 cattle and 50 sheep.

The waterer he purchased was 28" high, which is the recommended height for cattle. It is a little too high for sheep. However, since it was of the double bowl type he installed it in the fence between the cattle lot and the sheep pen and built a platform 8" high on the sheep side to make it easy for them to reach the water.

In Kansas they always say if you don't like the weather just wait a few minutes and it will change. That is just what it did on Thanksgiving Day in 1952 and a real cold snap with the worst snow storm of the year hit Burrton. This storm gave the newly installed waterer a good test.

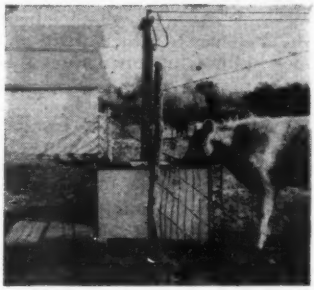
To check on the energy consumed a meter was installed on the waterer late in October. Here are the results.

October (7 days)	14
November	114
December	92
January	134
February	158
March	96
Total	608

In February Mr. Hitch's stock favored him with 9 calves and 50 lambs which added to the water consumed thereafter.

Mr. Hitch is well pleased with the work-saving features of his heater and it's economy. He had no ice to chop during any of the freezing weather, the automatic float kept the waterer filled and the electric heating element kept the water at an optimum temperature.

S. D. LAING



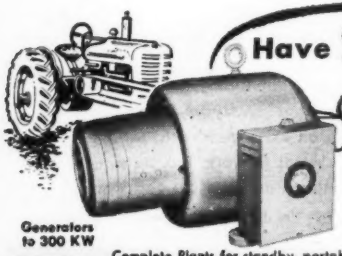
The waterer is installed in the fence-line, and a platform provided, on one side, to make it accessible to sheep.

Pasture Irrigation

Results of a two year test, carried on cooperatively by the U.S.D.A. and the Tennessee Experiment Station, showed that pasture irrigation is both practical and profitable. The test area was nine acres seeded to a mixture of orchard grass, ladino clover, and alfalfa. Part of the area was irrigated when rainfall was short, and the rest was not. The irrigated portion resulted in an average increase of 49% in the number of standard cow days of grazing, a 64% increase in milk production per acre, and a 38% increase in income above cost.

Starting at 24¢ per kilowatt hour in 1882, the average price of electricity has continued to decrease. The 1953 average was 2¾¢. Compared with 1882, that's a decrease of 88½%.

Adversity is sometimes hard upon a man; but for one man who can stand prosperity there are a hundred who will stand adversity. —*Thomas Carlyle*



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Part of the laying house at Coldurhol Farm in Baltimore County, showing three of the sunlamps that did such a fine job of protecting the health of the laying flock. Chicken wire above each fixture prevents hens from roosting on them.

Sunlamps and Newcastle

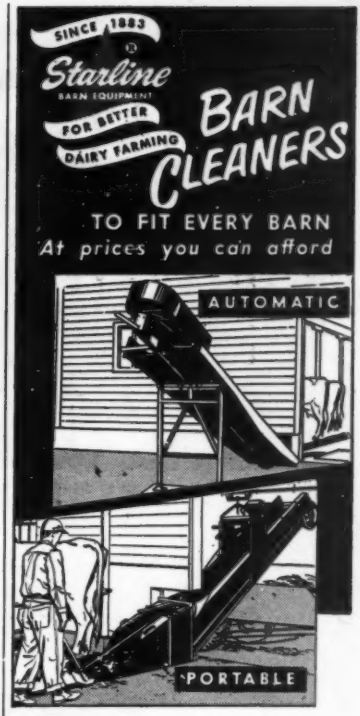
Ultraviolet rays from fluorescent sunlamps proved highly effective in combatting Newcastle disease in a flock of 5,000 White Leghorn layers at Coldurhol Farm, Perry Hall, Md.

Mr. Paul Lacey, owner-operator of the farm, is enthusiastic about the health-giving effect the lamps have on his hens.

Both of these hens contracted Newcastle. The hen on the left, unprotected by sunlamps, was more seriously affected, and recovered much more slowly. The other hen has full, well colored comb and wattles and is almost fully recovered. Mr. Lacey doubts she would have had disease if lamps had been used earlier.

Here's what he says, "They're better than anything I've seen. To test their effectiveness, I installed five lamps in one section of my laying house where I keep half of my flock. The hens in the other section had none at all. A short time later, Newcastle disease broke out and spread rapidly in the unprotected area, while in the section where there were sunlamps it developed much slower, was of shorter duration, and the hens recuperated faster. Since then I have put in lamps to protect my entire flock."

Automatic electric feeders are also bringing fine results on the Lacey poultry farm. They are credited with saving more than 6 bags of feed a week by eliminating scatter losses that occurred when other types of feeders were used.



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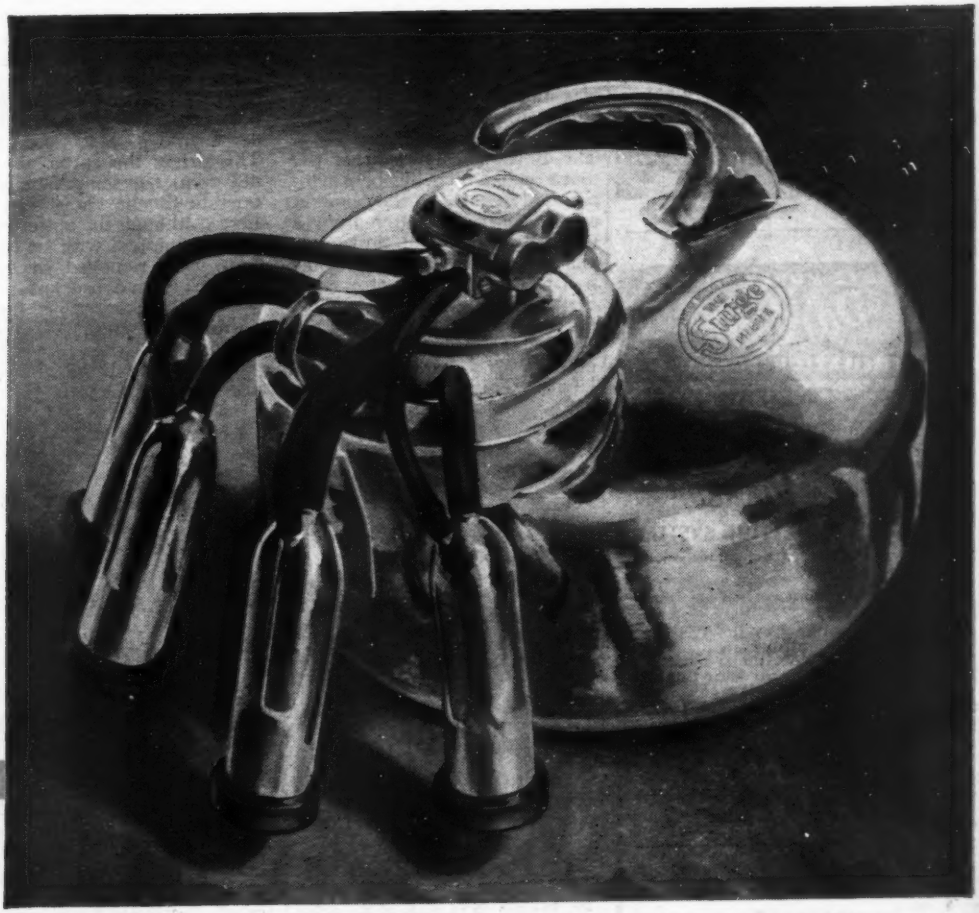

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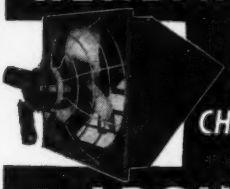

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Chopper Makes Better Bedding

Improves Coverage, Eases Spreading, Handling

By J. W. Hall

Henry D. Bowman and Son, who operate a small dairy and general farm in the Wirtz Community of Franklin County, Virginia, find that by chopping their baled straw it makes much better bedding and saves labor, too. They find that the cows stay cleaner than when using long straw for bedding.

In the spring of 1952, the Bowmans installed a 5 hp hay drying unit. The motor did double duty, operating the hay hoist as well as the drier. But, between drying seasons, the 5 hp motor was not used and stood as an idle investment. Therefore, they wanted to find a way to make it work for them.

One of their laborious chores was that of tearing the baled straw apart and spreading it around in the tramping barn. The Bowmans figured that the motor could be a big help with this daily chore. So they bought an old ensilage cutter from a neighbor who had just purchased a field harvester. They had let their own go at a sacrifice several years earlier when they purchased a field harvester.

The feed table of the ensilage cutter was cut down to 18" in length. This was sufficient to take the baled straw in comparatively large chunks, yet small enough so that it wouldn't take up valuable space. Since the barn was built about 100 years ago, the arrangements in the tramping shed were not as convenient as in a modern barn. However, by cutting out part of a log partition, they were able to mount the cutter in the opening.

The 5 hp hay drying motor was mounted on the wall above the ensilage cutter. A three wire #6 range cable was run to a range receptacle near the motor mount and a range connecting plug was attached to the motor. A control switch at the cutter completed the wiring.

The ensilage cutter has a 14" flat pulley and the motor has a 4", 2-groove, B-section pulley. This drives the cutter at about 480 rpm. The same V-belts that operate the hay hoist are used here. Although the cutter is normally equipped with six blades, four were removed to give a longer cut and use less power.

Now the chore of bedding the cattle is really a snap. The straw is stored in a shed directly over the cutter, and the number of bales needed each day is tossed

Mr. Bowman forks slices of the baled straw onto the shortened feed table of the old ensilage cutter which quickly chops and blows the bedding over stable area.

By swiveling the distributor, the chopped straw can be blown in any direction. Four of the original six blades were removed from the cutter to give a longer cut and reduce power requirements.

down. Strings are cut and the bales are fed to the chopper, piece by piece. By swiveling the delivery pipe, Mr. Bowman is able to blow the chopped straw to most parts of the tramping pen.

When you ask Mr. Bowman how he likes chopping his straw, he will grin, and tell you: "It takes a lot less labor to chop the straw than to tear the bales apart, and it saves a lot of time in spreading the straw. The cows are kept cleaner because they kick the loose fluffy straw back up over the droppings. Much time is saved when cleaning the barn, because the manure loader will pick it up much faster. This is because the manure does not hang together as tightly as when long straw is used."

Baled Hay Handler

Handling baled hay in a long narrow barn has presented a major problem for many farmers. A home made horizontal conveyor answers this problem for Wilmer H. Brubaker of West Alexandria, Ohio. Built almost entirely from scrap and salvaged material, this 38′ conveyor, driven by a ½ HP electric motor replaces two men in the hay mow.

The chain, flights, bearings and sprockets came from an old elevator. The conveyor bed is made from 2x8's and hung from the rafters about 8′ above the mow floor. The side rails are in 12′ sections, any one of which can be removed. A wedge shaped bale throw-off clamps to one side to unload bales anywhere along the line.

A second portable elevator, that is also used to unload ear corn and small grain, raises the bales from the wagons to the conveyor in the barn.

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Electric Units More Efficient

USDA Test Prove Their Superiority

Electric equipment is tops in efficiency for cooking, refrigerating and water heating. This has been proven by tests recently completed by the Housing and Household Equipment Division of the United States Department of Agriculture at the Agricultural Research Center, Beltsville, Maryland. Electric and bottled gas ranges, refrigerators, and water heaters were used in a series of scientific comparative efficiency tests. The appliances selected were current, moderate priced types.

Efficiency ratios were determined in British Thermal Units (BTU). A British Thermal Unit is the quantity of heat required to raise the temperature of one pound of water 1° F. Electricity was measured in kilowatt hours, and bottled gas (propane) in decitherms (one decitherm equals 10,000 BTU). The energy consumed for each of the cooking, refrigerating, and water heating tests were then calculated and converted to BTU.

Ranges were given rural home use tests in the laboratory set up at Beltsville. Light, medium, and heavy meals for a family of four were cooked according to farm family practices. Eight days of cooking for each of the eight ranges (four electric and four gas) comprised this phase of the study.

Above: The staff who conducted the tests are left to right: Mrs. Claire Shubert Brine, technician; Dr. Enid Satu Ross, household equipment specialist; Dr. Earl C. McCracken, physicist; Mrs. Lenore Sater Thye, head of the Bureau's Housing and Household Equipment Division; Miss Elizabeth Beveridge, household equipment specialist; and Mrs. Phyliss Hawkins Cain, technician. **Right:** Dr. McCracken records readings of the water heater tests.

Range Tests

For top-of-range cooking, electric ranges consumed an average of 57,201 BTU (for eight days of meal preparation), while bottled gas ranges used an average of 114,233 BTU. Oven cooking showed an average of 63,007 BTU for electric ranges, and 134,473 BTU for bottled gas. The combined use was an average 120,208 BTU for electric ranges against an average of 248,706 BTU for bottled gas ranges.

The results of the Bureau's tests show bottled gas ranges require 1.60 to 2.34 times as much energy as electric ranges for top-of-range cooking, and 1.89 to 2.48 times as much for

oven cooking. The complete cooking job was done on electric ranges for half the energy used by bottled gas ranges.

Refrigerator Tests

Refrigerator tests were conducted in a special room where constant temperatures could be maintained. Eight and nine cubic foot electric and bottled gas refrigerators were tested. All of them had across-the-top frozen food compartments.

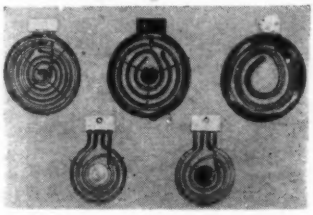
The results of these tests showed that the average use for electric refrigerators was only 3,744 BTU per day, compared with 43,556 BTU for the bottled gas refrigerators. Electricity topped bottled gas 11.6 to 1 for refrigeration!

Water Heater Tests

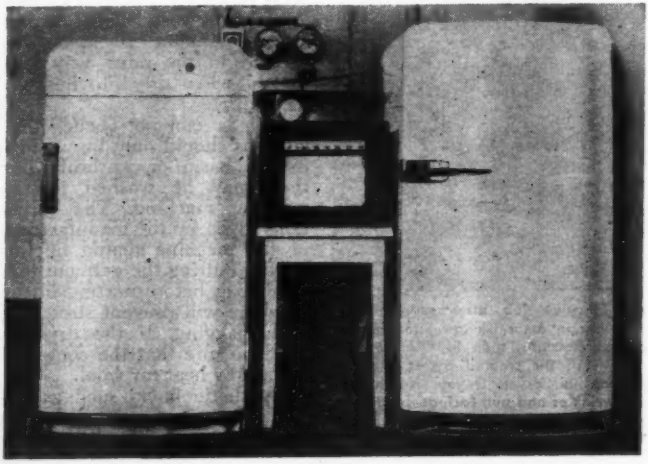
Electric and bottled gas water heaters were subjected to carefully controlled engineering tests in a constant temperature room. Tank capacities of each type were selected according to usual industry practices. Comparable units tested, therefore, were electric water heaters of 66 gallon storage capacity, and bottled gas water heaters of 30 gallon storage capacity.

Three different test schedules were followed. One was a 38 gallon drawoff test to simulate the amount of hot water used for every-day household tasks. The second was a 78 gallon drawoff test to simulate the amount required for heavier household use. The third—a 112 gallon drawoff test—was in accordance with the laboratory test schedule specified by the American Standards Association. Each time incoming water at 60 degrees Fahrenheit was heated to 160 degrees to obtain the 100 degree temperature rise specified by the American Standards Association.

Mrs. Brine does the cooking with Mrs. Cain reading the recording instrument in the range tests.



Above: The electric range surface units that were used in the test.
Below: The refrigerators were tested in a constant temperature room.



To supply 38 gallons of hot water, the electric water heaters used an average of 40,006 BTU; the bottled gas an average of 79,643 BTU. For 78 gallons of hot water, it took 71,651 BTU with the electric water heater and 121,962 BTU with bottled gas. The electric water heater used an average of 98,265 BTU and the bottled gas water heater 159,656 BTU for heating 112 gallons of hot water. Thus the electric water heaters were more efficient than bottled gas in a ratio ranging from 1.6 to 1 to 2 to 1 in the tests.

The results of these tests showed electric appliances were 11 times as efficient as bottled gas appliances for refrigeration, twice as efficient for cooking, and nearly twice as efficient for water heating.

The report of these tests have been published in Technical Bulletin No. 1073, "Comparitive Utilization of Energy by Household Electric and Liquified Petroleum Gas Ranges, Refrigerators and Water Heaters". A copy may be obtained for 20 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Knit Garments are Easily Laundered

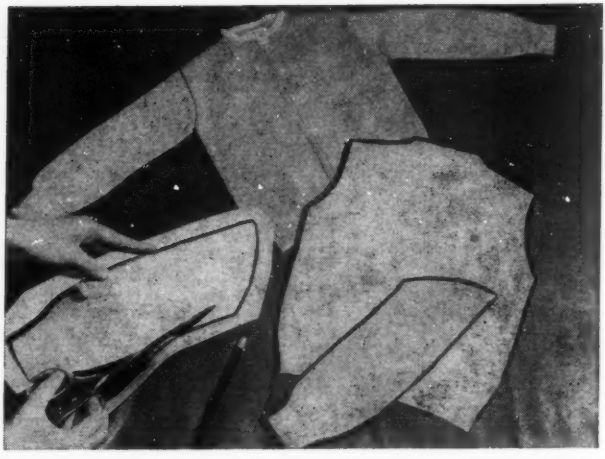
A Little *Special* Care Retains Their New Appearance

Does your family laundry contain a large number and variety of knitted garments, such as T-shirts, sweaters, dresses and socks? Are these of wool, cotton, nylon, dacron or the new blends of one or more fibers? While you know they are washable, do you look at them and wonder just what is the best method for laundering them?

Sweaters will last longer and retain their shape if they are given consideration when laundered. The front of the coat or cardigan sweater should be fastened before laundering. This will help the sweater to retain its shape and prevent the zipper from snagging the wool during the laundering process.

The scoop-neck sweater, which is very popular today, has created a laundry problem as the neck has a tendency to stretch. To prevent this, run a basting stitch around the neckline, pull it up very tight, and tie. This method may also be used on turtle necks, ribbed cuffs and ribbed waistlines. Turn down all cuffs for laundering. Check embroideries and jeweled trimmings of sweaters for washability before dipping in water.

Wool sweaters require extreme care in laundering as they easily stretch out of shape or shrink. Use only lukewarm water, with the wash and rinse water of the same temperature. Any change in water temperature encourages shrinkage. Wool garments require gentle handling to prevent matting and wear on the yarns. Always support the knitted garment with the hands when removing them from the water. This prevents the garment from stretching due to the weight of the water. Squeeze the suds through the garment. Lightly rub soapy fingers over soiled areas, do not scrub or twist.



Before washing a sweater, trace its outline on cardboard and cut the body and two sleeves separately. After sudsing, rinsing, and blotting it, insert the cardboard, piece by piece. Button the sweater and arrange it to fit frame smoothly.

For hurry-up job after sudsing—roll knitwear in a turkish towel to remove excess moisture, then lay flat in the current of air created by an electric fan or hair dryer. If you smooth out the wrinkles and pull facings, bindings, and seams into position, there will be little or no need for pressing.

A wool sweater will look newer, and retain its shape better, if dried on a frame. This may be a cardboard frame made by tracing the sweater on it before laundering. Cut out the cardboard to the sweater size with the body of the sweater in one piece and the sleeves separate. The frame might also be made of lightweight plywood.

Blot out the excess moisture with a towel and lay the sweater flat. Slip in the frame, straightening the sweater and fitting to the frame. Let it dry slowly away from heat. Do not place in the sun or near a radiator.

The sweater will not require pressing after drying on a frame. If necessary, to raise the nap and remove the wrinkles, steaming may be done. A steam iron is ideal. Hold it above the sweater and let the steam do the work. Do not rest the iron on the sweater. In place of a steam iron a clean damp cloth may be spread flat on the sweater with a hot iron held over the cloth, but not touching it.

To bring out the textured effect of a knitted garment, press down on it with a sponge or folded wash cloth during drying. Angora sweaters are washed in the same way and shaken when dried to fluff up the nap.

It is a common belief that woolens should only be washed in the basin or washtub, but they may be washed in the washing machine. The directions given by the manufacturer of the machine should be followed. Putting the garment in a mesh bag before putting in the machine will prevent stretching and snagging. If the dryer is used be sure that the control is set at low heat for wool.

Synthetic fibers such as nylon, orlon, and dacron do not require as much care as in the

laundering of wool. The soil is easily removed and they can be shaped by hand into their original form. They are washed in the basin or washing machine with medium hot water, using fresh suds if they are badly soiled. Handle like cottons for drying. They dry quickly in a dryer or by dripping dry.

The combined fiber garments are treated like wool, if they have as much as 50 per cent of wool. The new shrink-resistant treated wools will stretch if spread too much while wet. They may be dried by hand shaping like the synthetic fiber garment.

Cotton knits may be treated the same as any cotton garment. Use hot suds and rinse water. They may be dried in the dryer, hung on the clothesline, or a drying rack. Small items may be pressed on the outside of the

Fancy sweaters decorated with pearls and rhinestones, need only a gentle swishing through soapsuds and rinses. Keep buttoned during washing and support decorated part with your hands so it won't sag or snag the sweater.

laundry tub while wet, to dry. They will dry smooth and hold their shape. It may be necessary to lightly press the hems, bands, collars and cuffs of the garments that have been hung up to dry. If the ones dried in the dryer are removed as soon as dry they may be folded and put away without pressing. They will be soft and smooth.

Knit dresses require the same treatment as the sweater. Use lukewarm water if it is wool and hot water for cottons or synthetic fibers. The knit dress can go into the washing machine. It should be put in a mesh bag and the directions followed as given by the manufacturer of the machine. The dress, too, can be dried in a dryer. Nylon or orlon dresses may be spread out flat to dry, or they may be hung on a padded hanger, with the skirt on a clamp type hanger. They will drip dry in a short time. Press out all the excess moisture with a towel before hanging on the hanger, otherwise the weight of the water may weight down the hemline.

Any knit items that are launderable may be laundered in the washing machine if the right temperature of water and the correct length of time for the fiber is used. Clothes need sorting for this the same as they do for the regular laundry. Combine them according to the temperature and washing time required. Avoid combining dark items with light as dark woolens have a tendency to bleed. The same rules hold for using the dryer. Combine fibers that take the same temperature and time. You'll find the washer and dryer will save lots of time and effort in laundering knit garments.

The worst enemy of any garment whether it be knitted or woven is soil. Knits should be washed before they become too

To block a sweater with steam, spread it on an ironing board, and cover with a damp press cloth. Hold a hot iron just above the cloth. Leave it flat until dry.

soiled. The yarns easily absorb dirt, grime and perspiration. If they become imbedded, they are difficult to remove and also destroy the fiber. Soil, not laundering, wears out garments.

Record Player a Source of Joy

One rainy morning recently, my husband came into the house after chores, expecting to find the usual bedlam created by three active youngsters having to stay indoors. Instead he found that they had placed the card table in front of the electric radio-phonograph and were marching around the table while playing "Round and Round the Village". They played the record endlessly, it seemed, marching off the excess energy which might well have been used less happily. Enjoying the scene my husband commented, "That's the best investment we ever made".

Margaret Ann, the twins Mary and Michael and five-months-old Merle Edwards enjoy a record before bedtime.

It has been just that, not only has it been a means of entertainment but one of education. Nursery rhymes and Sunday School songs were learned quickly when the children were tiny. Now as a supplement to stories read to them, they are learning many fine recorded stories. Their sense of rhythm and appreciation of good music is developing. We do not have a large collection of records but as children like repetition they enjoy the same records over a long period of time.

Sometimes I hear "The Night before Christmas" several times on a hot summer day, but the children are happy. They have learned to take turns at choosing records and operating the phonograph.

One doesn't usually consider a radio-phonograph an important household appliance but to our family it has been one of our most enjoyable electrical investments.

Mrs. W. J. Edwards
Cedar Grove Wisconsin.

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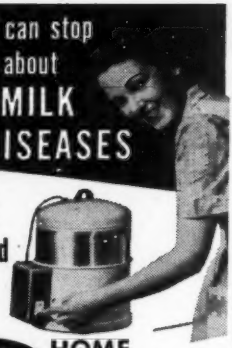

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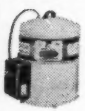

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Magazine

Braise Small Turkeys as a Change From Roasting.

Wintertime Recipes

Here's Hearty Fare to Satisfy Cold Weather Appetites

Small roaster type turkeys are delicious braised. It is a much quicker way to prepare them, say the food specialists of the U. S. Department of Agriculture.

To make, cut up a 3 to 5 pound ready-to-cook turkey into serving pieces. Cut the breast in half lengthwise and slice the gizzard and heart in half. Roll the pieces in ½ cup flour, ½ teaspoon salt and a little pepper. They may also be shaken a few at a time in flour in a paper bag.

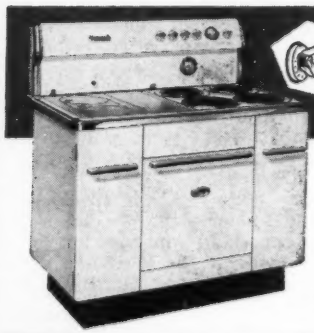
Melt enough fat in a large frying pan to make a layer ¼ inch thick. When the fat is hot, brown the pieces on all sides. Brown the thicker pieces first. This will take about 20 minutes. When all pieces are brown lower the heat and add a tablespoon water. Cover the pan. Cook over low heat about 20 minutes for small turkeys or 50 minutes for those weighing 4 to 5 pounds. Turn the pieces occasionally for even cooking. Remove the cover the last 10 minutes to let the steam escape from the pan, so the skin will be crisp. The liver will take only a few minutes to cook. It may be floured and cooked while the larger pieces are browning and then removed and reheated when the rest of the turkey is done. Or it may be cooked at the end of the cooking period when the skin is crisping.

Make a cream gravy to serve with the turkey.

Barbecue Sauce Adds Spicy Flavor

This same turkey will have a spicy flavor when treated with a barbecue sauce. After browning, spread the pieces in one layer in a large shallow pan and pour the barbecue sauce sparingly over the top. Cover with a lid or with aluminum foil and cook in the oven at 325°F. about 45 minutes. Baste the turkey with the sauce two or three times. Remove the lid or foil and cook uncovered for about 15 minutes longer or until the turkey is tender and the sauce is almost absorbed.

To make the barbecue sauce, mix 1½ cups water, ¾ cup catsup, ½ teaspoon chili powder, 2 tablespoons brown sugar, and 2 tablespoons butter or margarine. Simmer gently for 5 minutes. Use 1 to 1½ cups of this sauce for cooking the turkey, depend-



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ing on the size of the bird. Serve the rest of the sauce hot with the bird.

Hot Salad and Franks

Hot potato salad and frankfurters make a meal a picnic at any time of the year. Your family will relish them no matter what the season. Serve with hot rolls and a dessert of chiffon cake and fruit cup.

Allow one or two frankfurters per person. Drop the frankfurters in a kettle of boiling water. Cover kettle and remove from the stove or turn to low heat to keep the water hot, but not boiling. Let stand five to eight minutes and serve.

Hot Potato Salad

- 2 quarts diced, cooked potatoes
- 8 slices bacon
- 1 cup chopped onions
- ⅓ cup bacon fat
- 3 tablespoons flour
- 2 tablespoons sugar
- 2 teaspoons salt
- ½ teaspoon celery seed
- ⅛ teaspoon pepper
- 1 cup water
- ⅔ cup vinegar
- ¼ cup chopped pimiento

Place potatoes in 2½ quart glass bowl or casserole. Fry bacon until crisp and cook onions in bacon fat over low heat for about five minutes or until browned slightly. Mix flour, salt, sugar, celery seed, and pepper and blend into onion and fat mixture. Gradually pour in the water and vinegar, stirring constantly while cooking over low heat. Boil for one minute. Pour over potatoes. Add five slices of crisp bacon, broken into small bits. Add chopped pimiento and mix lightly. Cover the bowl or casserole with waxed paper and let stand one hour. Heat in a moderate over (325° F.) for 20 minutes or until heated through. Garnish with remaining bacon and parsley. Makes 8 servings.

Smoked Beef Tongue

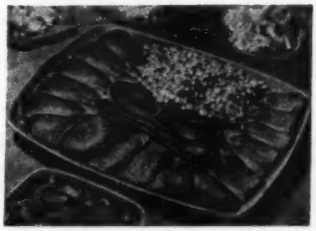
Here is a versatile meat, that is sure to make a hit no matter how you serve it. Delicious flavored, smoked beef tongue is so easy to cook and lends itself to a variety of dishes. Serve it sliced—hot or cold for the main meal, in casseroles, as the filling of a sandwich or as a meat platter for a buffet supper.

Smoked beef tongue ranges in weight from two to five pounds. Because of the small amount of waste, each pound will provide three to four servings.

Here's how to cook it. Cover the tongue with water and bring to a boil. Reduce heat and simmer until fork tender. Tongue needs to be cooked an hour to an hour and a quarter per pound. It is a long slow cooking process. When tender, remove from water and cool.

Slit the skin along the underside of the tongue. Gently peel it off being careful not to roughen the surface when removing the skin.

To carve, lay the tongue on its side, the small end to the carver's right. Slice lengthwise at the tip and cut the next slices slightly thicker at the side nearest the carver. Gradually increase the angle until the slices at the thick end are cut crosswise, thus keeping all slices fairly uniform in size.



Tongue and Scalloped Corn

- 1 cup diced cooked smoked tongue
- 2 tablespoons chopped onion
- margarine
- 2 tablespoons butter or
- 2 tablespoons flour
- 1 cup milk
- ⅛ teaspoon nutmeg
- 2 cups cooked whole kernel corn, drained
- ¼ cup bread crumbs
- 2 tablespoons butter or margarine, melted

Pan-fry onion in butter. Stir in flour. Add milk and nutmeg. Cook until mixture boils. Combine tongue, sauce and corn in a 1½ quart casserole. Combine bread crumbs and butter. Sprinkle on top of casserole. Bake in a moderate oven (350° F.) 25 to 30 minutes. Makes 4 servings.

Serve hot smoked tongue with colorful Mexican corn for an at-

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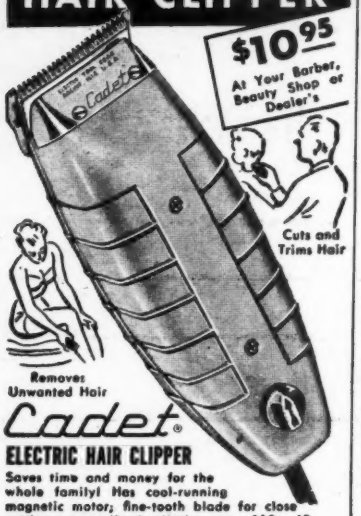

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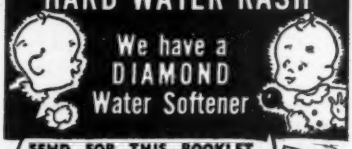

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tractive, tempting platter. Accompany it with mushroom gravy, made with the tongue stock, and crisp cabbage slaw.

Refrigerate leftover tongue and corn for a flavorful casserole dish, such as Tongue and Scalloped Corn. You'll find this an ideal choice for family suppers. A crisp salad, hot rolls, dessert and beverage complete this quick-to-prepare menu.

Found Facts

Using an electric blender, you can make soap jelly quickly even with cold water. Place 1 cup water with 1/5 cup soap in the glass container of the blender, put on the cover and run until the contents are well blended, about one minute. Pour the jelly into a jar to be used for washing surfaces and fabrics that should not be saturated with water.

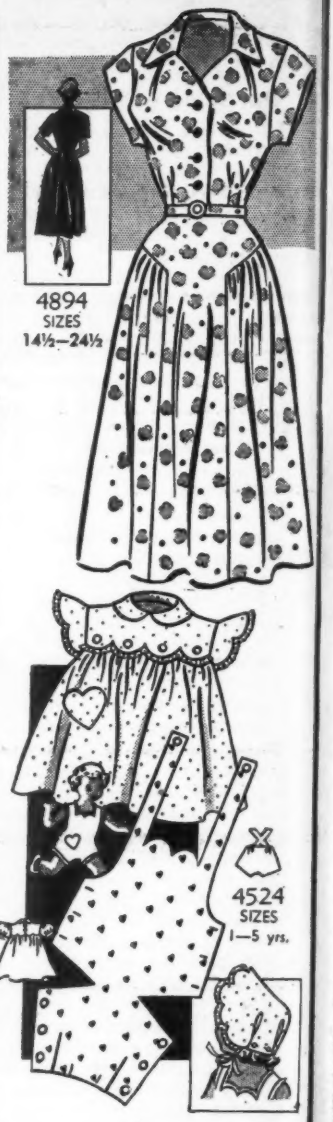
Wool experts recommend that you use two or three times the amount of soap in washing woolens as for other fibers. This is partly because wool is absorbent and partly because the suds help to "cushion" wool fibers which are sensitive to friction.

To remove an iodine stain that is fresh, launder in warm soapsuds. If set, moisten and dry in the sunshine. Or apply a paste of starch and ammonia and allow to dry, then brush it off and launder.

Use a soapy cloth to wipe up kitchen splashes as they occur. If they gang up on you, you'll have to scrub twice as hard.

Remodel the once cooked meats by transferring them into a flavorful casserole. The meat-in-disguise main dish can be crowned with a tender biscuit topping to make it a meal-in-one. Vary the biscuit topping to fit the undercover filling. Shredded cheese, finely chopped parsley, pimiento, or onion add their own flavor to biscuits. Caraway seeds give them a distinctive flavor.

To remove rouge from towels or handkerchiefs, soften the stain with glycerine and launder in hot soapsuds.



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Send THIRTY-FIVE CENTS (in coins) for EACH pattern to: ELECTRICITY ON THE FARM, 233, Pattern Department, 243 West 17th Street, New York 11, New York. Add FIVE CENTS for EACH pattern for 1st-class mailing.
IN CANADA: 60 Front Street, Toronto, Ontario.

Remember the KNOCK-KNOCK rage of many years ago? They're back! And here's a couple to PROVE it: "Knock, Knock." "Who's there?" "Chester." "Chester WHO?" "CHESTER SONG AT TWILIGHT." And if THAT doesn't make you shake your head and shudder, here's another. "Knock, Knock." "Who's there?" "AKRON." "Akron WHO?" "AKRON GIVE YOU ANYTHING BUT LOVE BABY." (Caw! Caw!) .... From a TEEN AGER'S RADIO PROGRAM: "When the Doc operated on Pop he opened mother's male." .... A fashion news note tells us that straw berets are now being worn in Paris. THAT'S funny. Over here we eat 'em with sugar and cream .... HANGOVER: something occupying a head that wasn't used the night before .... Friend of ours sez he WON'T buy his wife a new fur coat this year because she WON'T mend his socks. Sez if SHE don't give a DARN he don't give a WRAP .... Then there was the movie theater manager who had his teeth X-rayed. He just HAD to see a preview of coming EXTRACTIONS .... The football season is over but have you heard about the Barber College half-back who was penalized for clipping? .... ELOPEMENT: HOOKED and ladder brigade .... RIDDLE-OF-THE-MONTH: Why is Marilyn Monroe's picture a REAL work of art? ANSWER: It's a WHISTLER! .... DOCTOR: "Sir, you have SHINGLES." PATIENT: "Well, don't just STAND there — STUCCO me!" .... "Men," sez Ma Larkey, "are like record players. They play at different speeds, but whether they are 33, 45 or 78 they're still nice to have around." .... SODDEN THOUGHT: Nothing is ever accomplished by a three-man committee UNLESS one is sick and the other is absent .... We know a mountain climber who complains he just CAN'T seem to improve on his work. MUST be he's reached his PEAK .... HICCOUGH: a message from departed spirits .... DON'T count your chickens if you live near a main highway .... PARTING THOUGHT: The MORE a girl tolerates a man's shortcomings, the MORE she tolerates his long stayings

.... Your pun-peddler—
DUFFY.

Empty Vacuum Bag

A clean vacuum cleaner bag is important to efficient use of the cleaner. A most important rule to follow in getting full usage is to empty the bag every time the cleaner is used.

If the cleaner uses disposable bags, these must be of the type designed for the vacuum cleaner. These bags are specially constructed to hold dust in and yet let air out—a necessity for suction to pull in soil and dirt. *A brown grocery bag cannot be*

substituted for a disposable bag, as it will hold in the air and the cleaner will not clean a rug or carpet.

An annual complete inspection of a vacuum cleaner is recommended as an insurance of full benefits from its usage. A vacuum cleaner uses the same amount of energy and electricity whether it is doing an efficient job or not.

As a test in determining the efficiency of the vacuum cleaner, the upholstery tube is attached and the suction tested through it. If the suction isn't strong, the bag should be emptied and another test taken. If there still isn't any improvement, the cleaner needs a serviceman. Regardless of the type of cleaner, hairs and threads on a carpet should slip into the cleaner in a few strokes, if it is doing an efficient job.

Warning to Steam Iron Owners

Don't buy distilled water from auto service stations for use in your steam iron. Water from such sources may be contaminated with battery acid, which is harmful to the iron.

with RAIN BIRD Sprinklers

Forecast local showers when you want them, where you want them, with Rain Bird Sprinklers. They're engineered to provide even distribution of water at less cost, less labor, and are famous the world 'round for their faultless operation.

To stop erosion and for higher crop yield, let Rain Bird solve your irrigation problems.

Our research and planning department is at your service. Write today without obligation.

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SHELL CORN THIS FAST EASY WAY
135 TO 180 BU. PER HOUR

You've never seen anything to beat BELL'S NEW LOW-COST BALL-BEARING SHELLER. Shells corn about as fast as you can shovel it into the low-built easy feeding hopper, as shown. Equipped with 2-Bag Sacker, wagon loader, cob shaker or cob elevator as desired. Feed large or small, hard or soft ears. Pays for itself in time and labor saved. Electric motor, gasoline engine or tractor power. Write today for illustrated Folder and dealer's name.
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Raise STRONGER CHICKS *in the NEW* STROHLANDS *INFRARED* BROODER

It's REFLECTOMATIC!

- 97% of heat rays are reflected back from the aluminum hover, 18 in. from floor.
- Big current saving, up to 40%.
- Accurate automatic control of temperature at chick level.
- More uniform heat pattern—greater capacity.

Write for REFLECTOMATIC folder

HARFORD METAL PRODUCTS, INC.
Box F E. Aberdeen, Md.

for Junior Partners

Hi!

Corn, peas, beans, cauliflower, and I don't know what-all, can now be had all year round—right from the freezer. But tomatoes? They're something else. Ripe, red, and luscious—we have to wait for the "natives" to have them at their best. The greenhouse varieties are wonderful through the winter, but the ones we pick fresh from the garden—mmmmmm!

By now, I imagine you've gotten the new seed catalogs. They make pretty good reading of a cold winter's night! And the planning they lead to! Gosh, wouldn't it be something if the vegetables we harvest would look as good as the pictures? Actually, they can, but it takes more than wishful thinking to bring it about.

One of the simplest ways to get off to a good start is to get a jump on the weather. And with a good hotbed you can gain a couple of weeks.

Better get your seeds ordered—maybe you can gain more than two weeks! Talk over the plans given below with your Dad. Find the right spot for your hotbed and go to it.

Kenneth V. Anderson

How to Build a Hotbed

With Tips for Operating Economy

By A. B. KENNERLY

You won't get any more plants by using glass sash, to cover electrically heated hotbeds, than you will by using other materials. But you can save considerably on the amount of electricity required to heat it. Tests were made at the Sweet Potato Investigations Laboratory, Gilmer, Texas, on the use of three different kinds of covers for identical hotbeds where sweet potato plants were grown.

The different types of covers were glass, glass substitute and muslin. Muslin has been the most common type of covering used by farmers, primarily because of the low first cost.

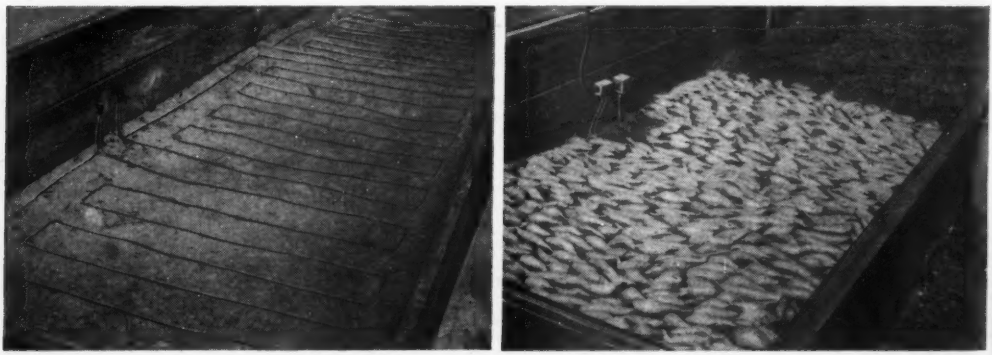
The area of each bed was 110 square feet and soil was banked along the outside of the walls for insulation. The heat source was from soil heating cable spaced to provide 7.3 watts per square foot. Thermostats were set to maintain the same temperature in all beds. All beds were planted to sweet potatoes the same day.

In the bed covered with glass sash only 13.2 kwhr were used for each 1,000 plants produced. In the bed with the glass substitute cover, the use of electricity jumped to 20.2 kwhr per thousand plants. Where muslin was used as a cover, the electricity used was 23.5 kwhr per thousand plants—almost twice that of the glass sash.

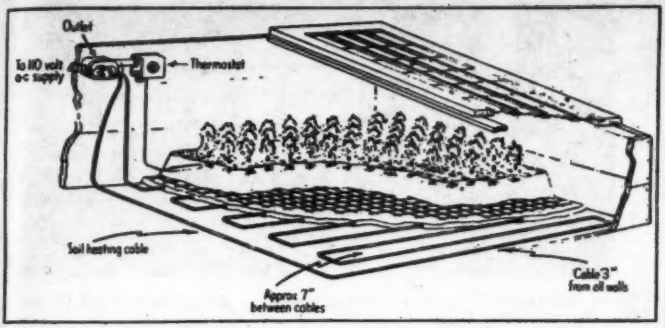
An advantage of using electricity for heating hotbeds was also revealed in a report from the Laboratory. "When all plants had been transferred to the field from the electric beds, plants in conventional compost beds on nearby farms were just beginning to be available," the report stated.

Two types of heating wire are available for heating hotbeds. The first is a special nickel-chromium wire insulated with asbestos and covered with a lead sheath for protection. This hotbed cable is sold in lengths of 60 or 120 feet. The reason for these lengths is that they are right for use on 115 volt or 230 volt current. If the cable is shorter than 60 feet on a 115 volt circuit, it gets too hot for the insulation and for proper heat and moisture distribution. The same is true with lengths shorter than 120 ft. on 230 volts. Longer cables, less heat. A length of 60 ft. is also just right for a two sash (6′ x 6′) bed. Lead sheathed hotbed cable is approximately ¼ inch in outside diameter.

The second type of cable is plastic insulated. The same kind of heating wire is used, but it



Left: Here is typical arrangement of soil heating cable in a sweet potato hotbed. **Right:** The cable was covered with an inch of soil. Then sweet potatoes were placed in the beds and covered with a thin layer of soil. When all plants had been transferred to the field from electric beds, plants were just becoming available from conventional compost beds.



One 60' length of cable will provide heat for an area 6 feet square (2 standard 3'-0" x 6'-0" sash). This cutaway diagram shows the way to fix such a bed. Over the cable there is 1" of soil, then a hardware cloth divider (this is optional and may be left out) and from 4 to 6 inches of soil. The thermostat bulb, buried in the soil, turns the current on or off as temperature requires.

has a different insulating cover. The cables are smaller in diameter than lead sheathed cable and are made in different sizes for beds from one sash up.

Just remember that with all heating cable, if you make it shorter you will use more electricity and get more heat—and that the cables, not being designed for the higher temperatures, will break down. The ends of the cable should be brought up out of the soil and protected from moisture to prevent current leakage with accompanying possibility of shocks and waste of electricity.

The illustration shows one method of placing cable in a hotbed. In this case it is 6 inches below the soil surface. The cable may also be laid right on the surface. It will give quicker heat in the bed, and more heat at the soil surface where the seeds are. The 6 inch depth, however, is most common. A depth of 4 inches is better for sweet potato bedding. Keep in mind that wherever you have a heating cable, moisture will be evaporated from the soil. This must be replaced by frequent watering.

Temperature Control

Temperature in the bed is regulated in two ways. Excessive daytime heat from the sun is relieved by lifting the sash a couple of inches. Temperatures at night and on cold or cloudy days may be regulated by a thermostat which turns the electric heat on and off automatically. The thermostat may be set for the temperature desired. The thermostat bulb is usually pressed just into the surface soil of the bed.

In locating the hotbed, place it where the drainage is good, where it will have protection from cold winds, with exposure to the sun from the south, and accessible to water and electricity. Be sure the wires supplying it are large enough to prevent excessive voltage drop. The bed may be dug down so the cable is 6 inches or more below the general ground surface; or, if drainage is poor the bed may be built above surface and banked around the outside.

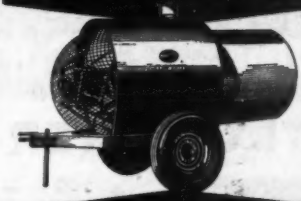
Operating Tips

Frames and sash should be tight to exclude wind and save heat. If you build and manage right, the sun will furnish most of the heat, with electricity pinch-hitting at night.

Adjust the thermostat with a thermometer and a bucket of water at the desired temperature. The thermostat circuit should close at about 60° for the cabbage family and lettuce. For peppers and tomatoes it should close at around 70°. Should you wish to grow both types of plants in the bed at the same time, terrace the soil in the tomato section about 6 inches higher than in the cabbage section. It is warmer higher up.

If you are interested in saving electricity, keep the beds tight. Cover them at night. And remember that a building, hedge, or fence on the north, serving as a windbreak, will help to cut operational cost.

Hartzell Power Speeds Drying...



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NEW *Infra-Red* BROODER . . .

★ Comes to you Complete
★ Fully Automatic, Thermostatically controlled
★ Available in 3 sizes
★ Featuring "ZIG-ZAG" mounted heat lamps

Now, an Infra-Red Brooder that leads all others in completeness . . . you get it from your dealer *complete* ready to plug in. Includes unit, thermostat, control switch, two 6' lengths of chain and lamps.

The easy-to-set wafer-type thermostat saves you time and electricity. It permits even, economical heat night and day, winter or summer. "Zig-Zag" mounted lamps eliminate cold spots found in pair-type units and prevents bunching of chicks.

Write for full details and prices.

DEALERS WANTED!

THE INFRA-RED BROODER MFG. CO.
3 N. PENN ST. MANHEIM, PENNA.

Heavy construction is used for the conveyor, as the cattle will get up on it. Two inch lumber is supported by pairs of posts set every ten feet.

Motor Driven Beefeteria

By Bruce Fearn

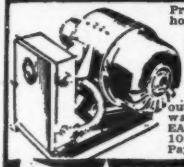
Delivering silage to the feed bunks on a beef cattle layout is always a problem. Many man hours and much physical labor are required. To squeeze some of the labor costs out of this operation, Robert Montgomery of New Hope, Pennsylvania, decided to let conveyors do the job.

Herdsman Ed Conner points out the worm drive mechanism which is at the end farthest from the silos. Conveyor flights are two feet apart.

Along the center of his open sided feed shelter, he built a chain link conveyor, similar to one for baled hay. For foundation supports he sunk a double row of creosoted poles into the ground at about ten foot intervals. On these posts, using heavy two inch lumber, he built a double floored trough with enough space between the floors for the return chain to pass through. The dimensions are 30" high by 30" wide by 54' long. The conveyor flights are 2" angle iron attached to standard #67 manure spreader chain. The power train is a ¼ hp motor through a worm drive and roller chain to the conveyor sprocket. The conveyor speed is 6 feet per minute.

To feed silage, the amount experience and time has proven to be right is tossed down. The falling silage is directed by a chute on to the travelling conveyor and thence to the entire length of the feed bunk. This job on the Montgomery farm used to take two hours per day. The conveyor, using less than 1 kwhr, cut this time 40 minutes.

KILL Power Failures



Protect your farm and home NOW with this low-cost stand-by generator that operates from tractor belt or gas engine. Complete with water-proof safety switch. Why wait until your lights go out, stoker, refrigerator, water, radio stops—EASY PAYMENT PLAN. 10% Down—36 Mos. to Pay.

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DRAINS Cellars, Cisterns, Wash Tubs; Irrigates your Garden, etc.

"TYPE P" Pump has 1,001 year 'round uses—house, garden, farm. Pumps 2400 GPH, 360 GPH 75' high or 1500 GPH from 25' well. Use ⅓ to ½ HP motor. DOES NOT CLOG! Postpaid if cash with order (West of Miss. add 50c) motor coupling included.

LABAWCO PUMPS $6.95

Belle Mead 49, N. J.

Questions and Answers

TV Radio Interference

▶**Question:** *Would it eliminate interference from electric motor and refrigerator if the television set was on a separate circuit?*

L. M. S., New York

▶**Answer:** Not necessarily. You can obtain static suppressors, for installation in the motor circuit, from electrical equipment dealers.

Sun Lamps For Hens

▶**Question:** *I have been wondering if small size ultra-violet sun lamps are available and if they would be practical to use in winter instead of cod liver oil for laying hens.*

Mrs. P. F., Wisconsin

▶**Answer:** Ultra-violet sun lamps may be used to replace cod liver oil in the diet of laying hens. You can use either R-40 type bulbs, which are of the incandescent type, or you can use the newer fluorescent sun lamps in 20 and 40 watt sizes. You will probably find the latter more economical to operate.

Motor Speeds

▶**Question:** *We are purchasing a line of high speed woodworking machines. What speed should the motors we purchase have for best service?*

M. D. M., Indiana

▶**Answer:** The 3450 RPM motor is excellent for use on high speed woodworking machines. However, it has no more power than the 1750 RPM motor and it does not have the flexibility of application that the slower speed motor does. If you plan to use the motor for other purposes, use the 1750 RPM motor and step up the speed by use of pulleys. Economy of operation and length of service should be identical with either motor.

Automatic Drier With Wringer Type Washer

▶**Question:** *Have a wringer type washer. Because of the severe winter we had last year, we want to purchase an electric drier. We appreciate that our wringer type machine does not get as much water from the clothes as an automatic washer. However, with our present water setup and the size of the washing each week, we feel we cannot part with our type of washer. Can you please tell me approximately how much an electric drier would cost us per month with our washer? We don't feel, at this time, we can buy both a drier and a washer and in view of last winter's severity, the drier would be most in demand.*

Mrs. S. M., Wisconsin

▶**Answer:** There have been some studies that show that wringers and even spintype conventional washers extract more moisture from washed clothes than do the automatics. Therefore, you are well prepared for using a drier to the greatest advantage. The cost of operation will depend on the amount of clothes dried. Dryers are rated at about 4500 watts, which means 4½ kwhr of current for each hour of operation. As it takes between ½ and ¾ of an hour to dry a load, a dryer will use between 2¼ and 2¾ kwhr per load. As reported in our December issue, the average monthly current use of a dryer in an Iowa farm home, over a 2 year period, was 21 kwhr per month.

Jam Relay for Loader

▶**Question:** *We have a 10 hp electric motor on a hammer mill and a ¾ hp electric motor on the hammer mill feeder. Is there a switch on the market which would stop the ¾ hp feeder motor when the 10 hp motor is overloaded, and will start the feeder motor again when the load has returned to normal?*

L. F., Iowa

▶**Answer:** Current controlling relays are available that will do just the job you have in mind. The Agricultural Engineering Department at the University of Illinois at Urbana has been working on just such a feed grinder control arrangement. Write to any of these firms for this kind of equipment: General Electric Company, Schenectady, N. Y.; Westinghouse Electric Corp., Pittsburgh, Pa.; Allen-Bradley Company, Milwaukee, Wis.

Elevator Motor Position

▶**Question:** *Is there a lot of difference if the motor for a double chained elevator is placed at the upper or the lower end? Is there a lot more strain on the chains by having the motor at the lower end?*

H. P., Wisconsin

▶**Answer:** Baled hay elevators, or any portable elevator employing chains, should have the motor located at the upper end. This puts the power at the actual point of drive for the chains. However, many of them are built with the motor at the lower end simply as a means of convenience. There is very little difference in the strain on the chains in either position.

FREE...

Inside story of the electric

"HIRED HAND"

One of the modern farmer's most useful "hired hands" isn't even human. It's the Time Switch — it never forgets, never oversleeps.

When incubators are in operation, a Time Switch may actuate the egg-turning mechanism. You don't have to get up with the chickens to turn the poultry house lights on and off. A Time Switch turns irrigation pumps on and off, does so many other things that you'll want more information.

The whole story of Time Switches—those wonderful, automatic workers—is told in the FREE booklet, "The Story of the Electric Watchman." Write a postcard to: TIME SWITCH SECTION, National Electrical Mfrs. Ass'n., 155 E. 44th St., Dept. EF-2-4, New York 17, N. Y.

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Service for the Reader

As a reader of ELECTRICITY ON THE FARM Magazine you are entitled to our information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank below to tell us your problem and we will see that you get the information you want. That's all there is to it. Easy, simple, and it costs nothing.

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24 W. 40th St., New York 18, N. Y.

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NAME.....

R.F.D.....Post Office.....

County.....State.....

What Would You Say?

CONTEST

Here is a contest the whole family can enjoy. Cash Prizes will be awarded for the best suggestion for a fifth line to complete the verse at the bottom of this page. Lots of fun and you may win $25 cash.

RULES—FEBRUARY CONTEST

Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $25; the second prize $10. In addition, five consolation prizes of $3 each will be awarded for the best line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries must be sent to the Contest Editor, ELECTRICITY ON THE FARM Magazine, 8 So. Dearborn Street, Chicago 3, Ill. before March 10.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM Magazine.

Winning names and entries will be announced in the May 1954 issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

My neighbor, when the weather is hot,
Uses all of the patience he's got
A-teaching his cows
The right place to browse
? ? ? ? ? ?

(A) What electrical problems or applications would you like our editors to cover more thoroughly in future issues.....

.....

.....

.....

My name is.....

R.F.D.....Post Office.....

County.....State.....

Awards for November Contest

It's time to take a turkey
Trussed and stuffed chock-full
Roast it e-lec-tric-ally
? ? ? ? ? ?

The Winning Fourth Lines

FIRST PRIZE—$25 CASH

"Results are never doubtful"
Mrs. P. G. Ryan
R.F.D. #5
Enosburg Falls, Vermont

SECOND PRIZE—$10 CASH

"Won't shrink—stays flavor full"
David Twining
Box 198
Glenarm, Maryland

Five Consolation Prizes—$3 Each

"A luscious ovenfull!"
Keith W. Dempster
R.R. 1
Grinnell, Iowa

"For succulence delightful"
Elmer G. Kuhn
R. 1
Sheboygan Falls, Wisconsin

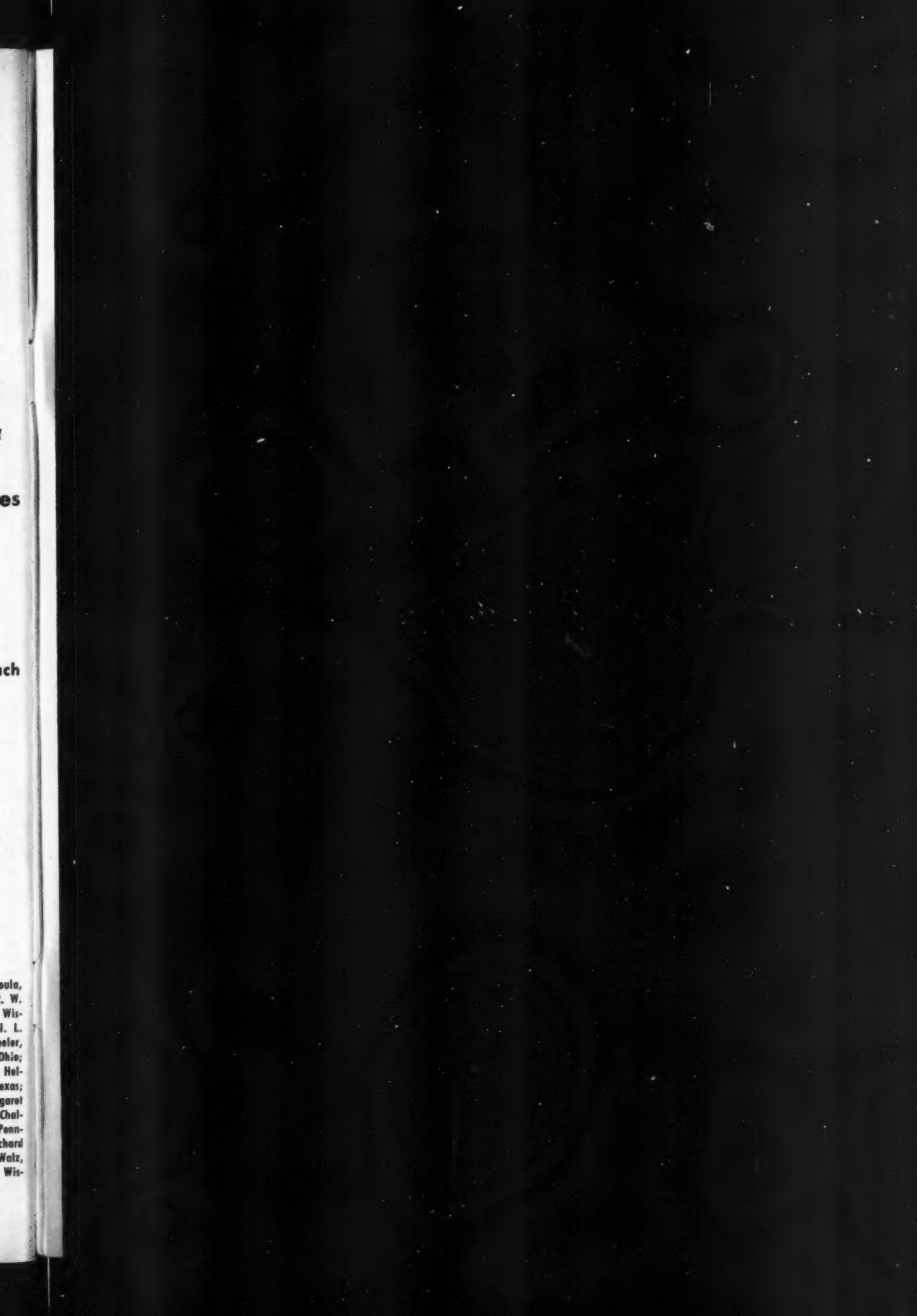
"'Twill be a tasty forkful"
Mrs. H. A. Hamm
R.F.D. #2
Simsbury, Connecticut

"'Watt' feast more bountiful!"
Mrs. Bert Ewart
Route 2
Peabody, Kansas

"For a tasty, tender plate-full"
George Koller
R.R. 2
Spring Green, Wisconsin

Honorable Mention

Mrs. Earl Bechtold, Davis, Illinois; J. M. Berg, Missoula, Mont.; Raymond C. Brane, Warren Indiana; Mrs. R. W. Carr, Parkersburg, W. Va.; Anton Dolato, Krakow, Wisconsin; Mrs. A. E. Forest, Thiensville, Wisconsin; I. L. Gardner, Willimantic, Connecticut; Mrs. Wm. Greeler, Neosho, Wisc.; Max E. Haeberle, Proctorville, Ohio; Mrs. Miles E. Harsh, Kinzers, Pennsylvania; H. H. Helman, Onekama, Michigan; H. S. Kennedy, Alba, Texas; Mrs. George Koller, Spring Green, Wisconsin; Margaret Kozak, Independence, Missouri; Miss Doris Lewis, Chalfont, Pennsylvania; Mrs. Leidy Lewis, Chalfont, Pennsylvania; Harold Robinson, New Augusta, Ind.; Richard P. Vervalin, Drums, Pennsylvania; Mrs. Anton Walz, St. Joseph, Minnesota; G. L. Warner, Green Bay, Wisconsin; Mrs. Ruth Woolston, Chesaning, Michigan.



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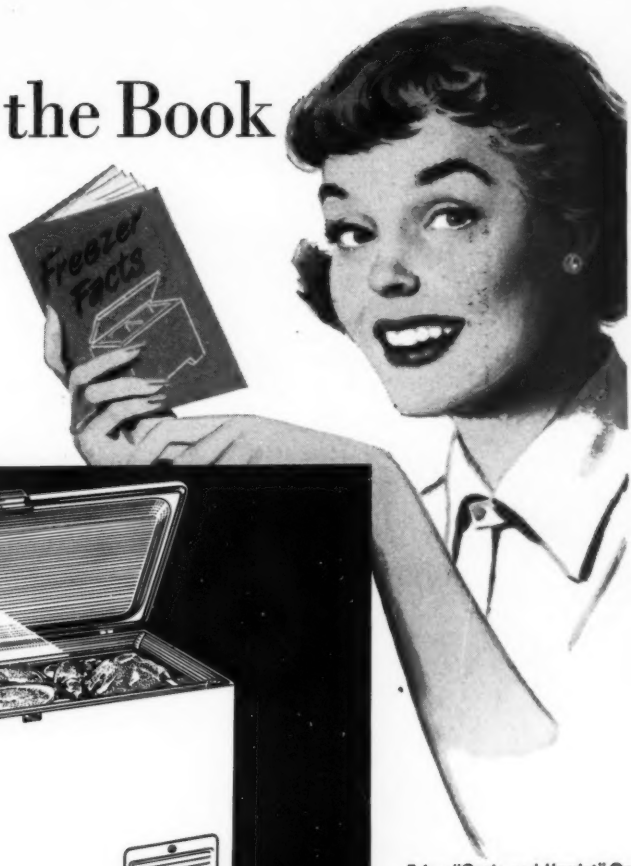

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Yes . . . Hotpoint Freezers top the list of *only three* freezers which have earned the "recommended" rating of one of America's oldest, largest and most reliable consumer organizations after exhaustive tests of *all* leading makes! Here is powerful, independent proof that Hotpoint Freezers are outstanding buys—engineered and built to give you years of safe, trouble-free, economical food protection.

See all four sizes—8, 10, 17, and 26 cubic feet.* Prices are reasonable—easy terms, if desired.

*Dealers are listed in most classified phone directories

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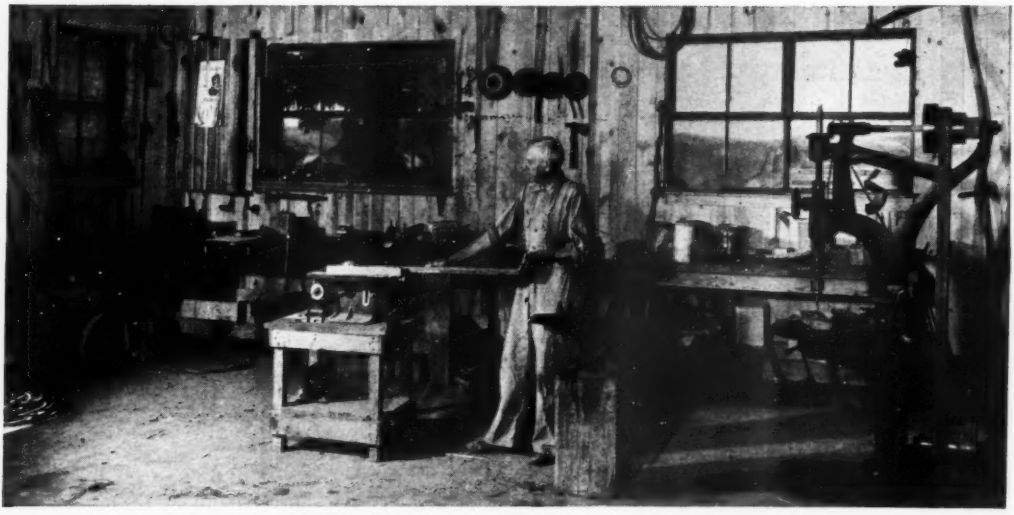
ELECTRICITY ON THE FARM
24 W. 40th St., New York 18, N. Y.



Here's a farm shop with a full complement of electric tools that give real help in handling maintenance and repair work quickly and efficiently.

IT PAYS TO HIRE FAST WORKERS

Fast work and good results are what you get when your helpers are electric tools. A well equipped, electrified farm shop brings satisfaction all year round. But it takes on special values in the winter off-season when you're getting equipment in shape for spring and summer.

Ripping a board is a matter of seconds when you have a motor-driven saw. A drill press will go through wood or metal like butter. The electric grinder and air compressor are two more examples of fast assistants that get things done in a hurry. And they really do a good job.

Electric tools open the way to a profitable hobby besides. You can make furniture for your home, or farm equipment that would cost a lot to buy. It's a wonderful opportunity to save money and have some pleasure at the same time.

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Our Rural Power Representative will be glad to assist you in selecting the type of electric tools that are best for your requirements. He will also be glad to advise you of other ways in which you can use electricity to improve working conditions and farm production. Write, or telephone:

Columbus and Southern Ohio Electric Company